

The

CONSTRUCTOR

OFFICIAL PUBLICATION OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA



Volume XXXII

AUGUST 1950

Number 8

● BUILDINGS

● HIGHWAYS

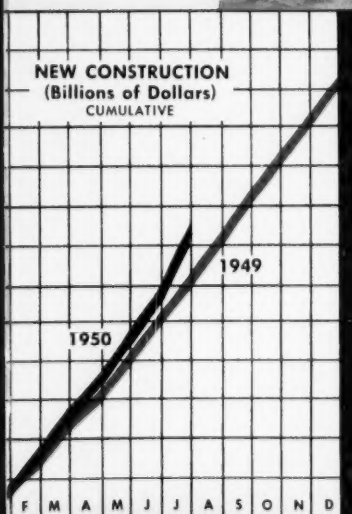
● AIRPORTS

● RAILROADS

PUBLIC WORKS



NEW CONSTRUCTION
(Billions of Dollars)
CUMULATIVE



EATON

2-Speed Truck

AXLES Make Trucks Last Longer

Reduce Maintenance Costs

Because they double the number of gear ratios available on any truck, Eaton 2-Speed Axles permit the use of an efficient ratio for every operating condition. From "low low" for starting under full load to "high high" for empty return trips, the driver can select the ratio that puts the least stress on the engine and power transmitting units. As a result, maintenance costs are decreased and truck life is increased. Ask your truck dealer to show you how Eaton 2-Speed Axles more than pay for themselves on the 1½-ton and larger trucks for which they are available.



Axle Division
EATON MANUFACTURING COMPANY
CLEVELAND, OHIO



PRODUCTS: SODIUM COOLED, POPPET, AND FREE VALVES • TAPPETS • HYDRAULIC VALVE LIFTERS • VALVE SEAT INSERTS • JET ENGINE PARTS • ROTOR PUMPS • MOTOR TRUCK AXLES • PERMANENT MOLD GRAY IRON CASTINGS • HEATER-DEFROSTER UNITS • SNAP RINGS • SPRING TITLES • SPRING WASHERS • COLD DRAWN STEEL • STAMPINGS • LEAF AND COIL SPRINGS • DYNAMATIC DRIVES, BRAKES, DYNAMOMETERS

Cost conscious?

**Here's the champ
cost-cutter!**

THIS IS IT—Goodyear's SURE-GRIP tire—the tire that's the overwhelming favorite of economy-minded construction men because it cuts over-all hauling costs. SURE-GRIP is tops for drive-wheel traction on graders and pans because it was specifically designed to deliver maximum performance on these specific jobs.

**Goodyear's got the winning team
of special-purpose tires**



Sure-Grip, All-Weather—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

HARD ROCK LUG

*Super-tough champ for all
types of rock work*

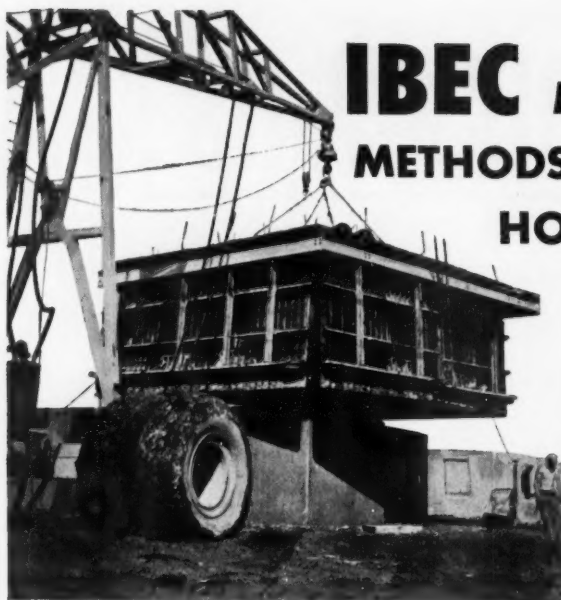
ALL-WEATHER

*Finest for flotation, rolling
big loads faster*

Here are two more great tires for construction work, each the outstanding favorite in its class because each is specially engineered to help you move more yardage faster and cheaper.

GOOD YEAR

MORE TONS ARE HAULED ON GOODYEAR TIRES THAN ON ANY OTHER KIND



IBEC MASS-PRODUCTION METHODS ACHIEVE NOTABLE HOUSING ECONOMIES

● Imagination and know-how, working with good concrete, have achieved another notable advance. Utilizing what in essence is a mobile production line on the job site, the Ibec Method produces attractive, all-concrete homes, at costs which revalue the home-building dollar.

Heart of the Ibec Method is a 25-ton form used for both exterior and interior walls. A 30-ton crane positions the form on a cast-in-place floor slab. Roof slabs, precast on the ground in tiers, are placed on the house by Billner vacuum lifting device. Monolithic concrete walls in a single operation . . . no shoring, scaffolding, ladders . . . completing in hours what normally takes days.

Recent example is Marshall Manor, a 204-unit, low-cost housing project at Norfolk, Va., where attractive, fire-safe homes, built with Lone Star Cement and lightweight, insulating aggregates, rent for only \$45. a month.

Here is Gibraltar-like, all-concrete construction—impervious to fire, termites, weather, wear. Adaptable to any good architectural design, the Ibec Method stretches the building dollar in the home-owner's favor.



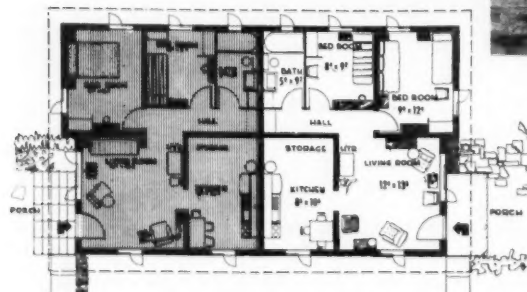
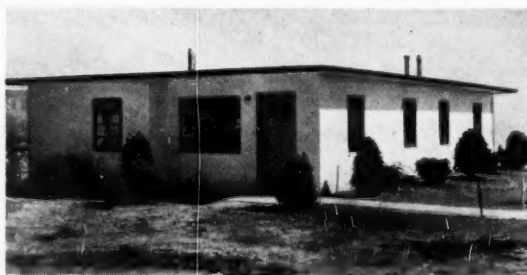
MARSHALL MANOR, Norfolk, Va.

Built by **HENRY CLAY HOFHEIMER II**, Norfolk

Construction Method developed by
IBEC HOUSING CORPORATION,

Affiliate of **INTERNATIONAL BASIC ECONOMY CORP.,**
New York

Built with Lone Star Ready-Mix Concrete from:
SOUTHERN MATERIALS CO., INC., Norfolk—Richmond



LONE STAR CEMENT CORPORATION

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LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 15 MODERN MILLS, 27,500,000 BARRELS ANNUAL CAPACITY

The CONSTRUCTOR

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COVER

The giant, six-bladed, 102-inch cutter head, shown raised for oiling, is part of a hydraulic dredge being used in the construction of the eight-and-a-half-mile, \$38,000,000 Chain of Rocks Canal, the largest earth-moving project ever undertaken in the St. Louis area. The dredge is capable of excavating the equivalent of 72 railroad freight cars of earth in one hour. The Army Corps of Engineers is doing the job with the McWilliams Dredging Company, A.G.C., New Orleans, doing the prime earth-moving work. Excavation of the canal and the construction of the levees require moving 23,300,000 cubic yards of dirt and will take less than two years to complete. Post-Dispatch—Black Star photo.

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WHEN YOU'RE REACHING

HIGH

There is no other combination to choose from like these Northwests. Whether Crawler or Rubber Tired you have a range of equipment to choose from with a smoothness of operation and an ease of upkeep that can't be equalled.

It is the ability of Northwest equipment to fit itself to the most profitable solution of the problem that makes it standard with so many leading contractors.

The Northwest "Feather-Touch" Clutch Control makes operation on these high loads easy *without* the use of delicate equipment, pumps or valves. Uniform Pressure Swing Clutches eliminate the jerks and grabs that would make swinging booms like this tough. The Northwest High-Speed, Power-Controlled Boom Hoist is independent of all other operations.

These are just a few of the many Northwest advantages that make the "long reach" jobs simpler and more profitable. But, whatever kind of a crane job you have, you owe it to yourself to find out why so many contractors buy Northwests again and again. Let us give you more complete details.

NORTHWEST ENGINEERING CO.

1502-B Field Bldg., 135 South LaSalle St.
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and FAR

only the best
for the heart of the job

MAKE YOUR KEY MACHINE
A NORTHWEST
CRAWLER CRANE

PROFIT

NORTHWEST

CRAWLER and TRUCK MOUNTED SHOVELS • CRANES • DRAGLINES • PULLSHOVELS

Controls over the economy were the order of the day in Congressional committees during early August. The Senate Banking Committee reversed itself on two or three occasions. On August 2 it voted to add "some form" of standby control legislation, then voted in favor of a surprise proposal to use the cost-of-living index of the Bureau of Labor Statistics as a "trigger" to place wage-price-rationing controls in effect automatically when it increases to a certain point. In one way, proposal would place burden on industry and labor of keeping prices down.

President's requests for controls did not include wage-price-rationing, but Administration hurriedly got on record as to what kind of standby controls it wanted, if Congress insists on extending them. (pages 26-27)

Outlook for construction depends on extent of controlled economy, further developments. President's first action was restriction of housing credit. He also asked agencies to reexamine their public works programs with a view to conserving materials. First noteworthy effect on local public works was action of City of New York in drastically curtailing its public works program to finance a gigantic civil defense program. Two projects—a new prison and new facade for city hall estimated at \$7 million—were sidetracked indefinitely. (page 23)

Officials and staff of A.G.C. who passed through the trial-and-error era of construction in the early days of World War II met with representatives of government agencies on July 21 to discuss how this knowledge of construction mobilization might best be applied to the present crisis. A.G.C.'s Committee on National Defense has been asked to keep in close contact with the agencies and to stand by for consultation on construction problems and policies. (pages 24-25)

Hydrogen and atomic weapons production will be substantially stepped up, announced Senator Brian McMahon (D., Conn.) after a conference with defense chiefs. The regular Con-

gressional appropriation for 1950 is \$650 million for the atomic program. President Truman has asked a supplementary \$260 million for the hydrogen program. The Atomic Energy Commission has disclosed that it has contracted with E. I. duPont de Nemours & Company for production of H-bomb explosives. This company will design, build and operate new production facilities at an undisclosed site. The duPont arrangement is that the government pays all costs. duPont received a fee of \$1.00. Further requests for atomic energy funds are forecast.

A.G.C.'s new booklet, "Undivided Responsibility—Key to Lower Construction Costs" was distributed to members with the National News Letter of July 22. Its worth as a medium for supporting the single contract system was instantly recognized. Requests for several thousand copies were received in Washington before the booklet was available in quantities. A summary of its contents will be found on page 42.

An amendment to the War Contractors Relief Act, introduced by Senator McCarran (D., Nev.) finally was reported out of the House Judiciary Committee without amendment on August 2. The McCarran measure had been substituted for the bill introduced in the House by Representative Walter (D., Pa.). Favorable action is expected soon. The Senate has already passed the bill. Details of the bill amending the Lucas Act, which was rewritten to conform to President Truman's wishes, will be found on page 27.

The composite mile cost index of the Bureau of Public Roads during the second quarter of 1950 dropped 0.5 per cent below the previous quarter, the Bureau has just announced. This slight decline brought costs 15.3 per cent below the postwar peak in the fourth quarter of 1948. In the second quarter there was practically no change in the cost of common excavation and concrete pavement. A drop of 3 per cent in the cost of building structures accounts for the continued downward trend of the index.

A Senate labor subcommittee has approved a House-passed bill which would restore about 16,000 beds to the Veterans Administration's hospital construction program. The bill, passed last year by the House, would restore to the program 24 new hospitals that were cut back in the President's budget message for fiscal 1950. Fourteen additional hospital extensions, dropped in the same budget message, would also be restored by the bill.

Keen competition for Federal-aid highway construction projects is reported by the Bureau of Public Roads. For the first half of this year, the number of bidders per project on Federal-aid work reached 7.7. The average for the past four years is as follows: 1946—3.9 bidders; 1947—3.8 bidders; 1948—4.2 bidders; and 1949—6.3 bidders.

The \$733 million federal-aid highway bill which has passed the House has been reported out of the Senate's Committee on Public Works. It had not been brought up for passage at press time. The Senate's measure is approximately \$87.5 million over the appropriation approved by the House. (page 29)

Each cent per gallon of state gasoline taxes is earning \$86 million a year over what it did in 1940, announces the American Petroleum Institute. Increased gas taxes, increased numbers of motor vehicles and increased use of each vehicle are rolling up a total that should finance a tremendous program of highway improvements throughout the nation. (page 34)

Military assistance to foreign nations to the extent of \$4 billion was asked by the President in a letter to the Speaker of the House on August 1. This sum, when appropriated, will be used under the Mutual Defense Assistance program, which the President mentioned in his message of July 19. Mr. Truman urged both houses to take prompt action since the major portion of the amount was to go for military equipment which took time to produce.

There's Extra Performance in Every Attachment

with
**ALL-WHEEL
DRIVE
ALL-WHEEL
STEER**

Extra performance which increases profits by doing the work faster and better, and reducing investment in part-time equipment. All-Wheel Drive and All-Wheel Steer handle either a front- or rear-mounted attachment with no sacrifice of operating efficiency, where ordinary graders—handicapped by a dead front end and lack of rear steer—would be helpless through loss of traction or directional control.

AUSTIN-WESTERN COMPANY, AURORA, ILLINOIS, U.S.A.



Bulldozer



Scarifier



Loader



V-Plow



Roller



Rotary Plow

BUILDERS & ROAD MACHINERY
Austin Western
SINCE 1909

A Series of Graphs Outlining the Construction Trend

Compiled by The Associated General Contractors of America

TREND OF CONSTRUCTION COSTS

The average of construction costs in the principal construction centers of the United States for July stands at Index Number 357, according to the A.G.C. Index. The cost figure for July 1949 was 343. The 1913 average equals 100.

WAGE AND MATERIAL PRICE TRENDS

The average of wages in the principal construction centers of the United States stands at 488 for July. One year ago the average stood at 462. The average of prices paid by contractors for basic construction materials for July stands at Index

Number 271. The average a year ago stood at 263. The 1913 average, again, equals 100.

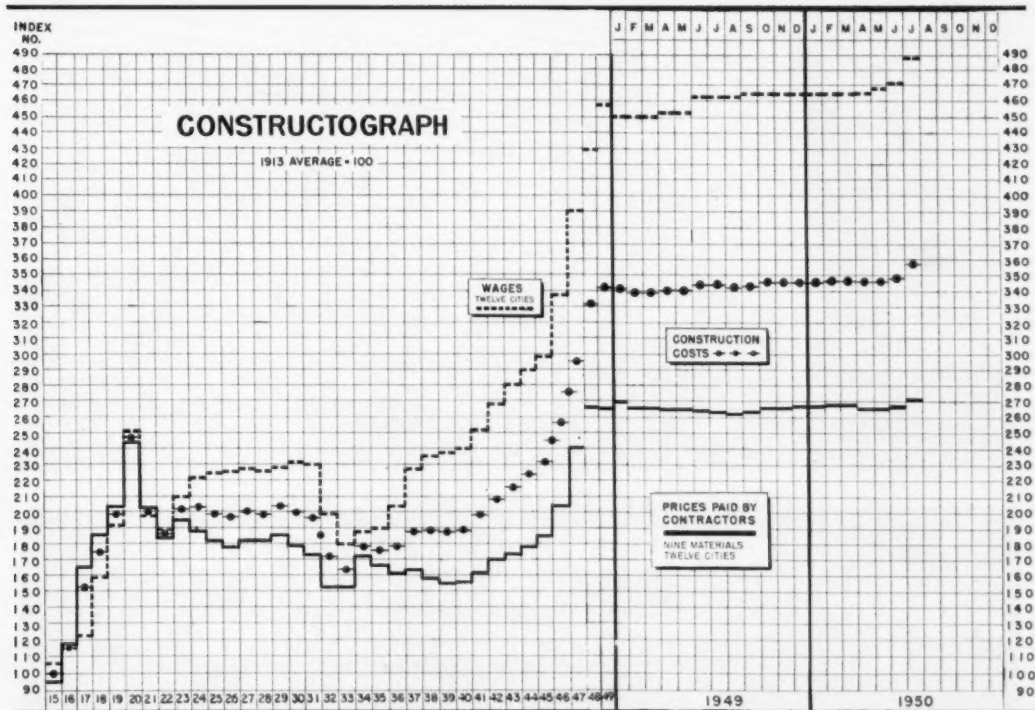
CONTRACT AWARDS IN 37 STATES

The volume of contracts awarded during June (Index Number 293, based on 1936-1938) is a decrease of 2 points from May, and an increase of 83 points above June 1949.

REVENUE FREIGHT LOADINGS

Revenue freight loaded during the first 29 weeks of 1950 totaled 20,060,291 cars. For the same period in 1949, loadings amounted to 20,775,102 cars. This represents a decrease of 3.4 per cent.

● Wage, Material Price and Construction Cost Trends





You'll Want This Latest Information ON DRIVE-IN THEATRE FRAMING

The catalog on the left shows the details of the two types of Macomber Drive-In Theatre Screen Supports engineered, fabricated and erected in accordance with state authority groups who approve this type of structure. The one shown is a modified Bowstring frame with sloping front for a low projection angle. The other type is an "A" Frame design with vertical screen where projection booth is elevated midway up amphitheatre layout. Frames are made in two sizes for medium and large layouts. All four sides of these screen towers have Macomber Nailable Steel Girts for attachment of finishing materials and screen surface. These screens designed for 100 mile an hour wind pressure are standardized, in production now and approved in every detail for a profitable investment. Write us for catalog.



STANDARDIZED STEEL BUILDING PRODUCTS



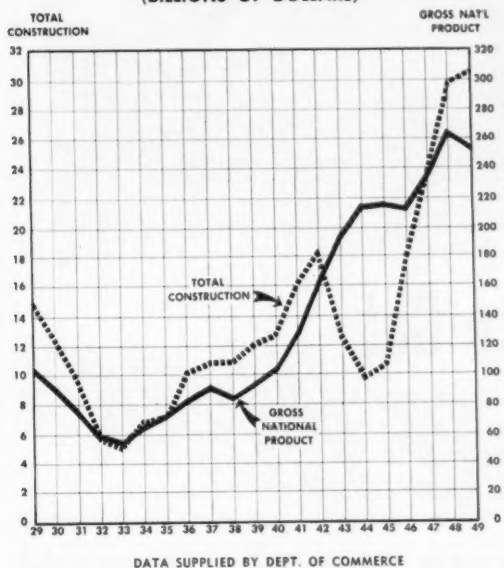
MACOMBER • INCORPORATED

CANTON, OHIO

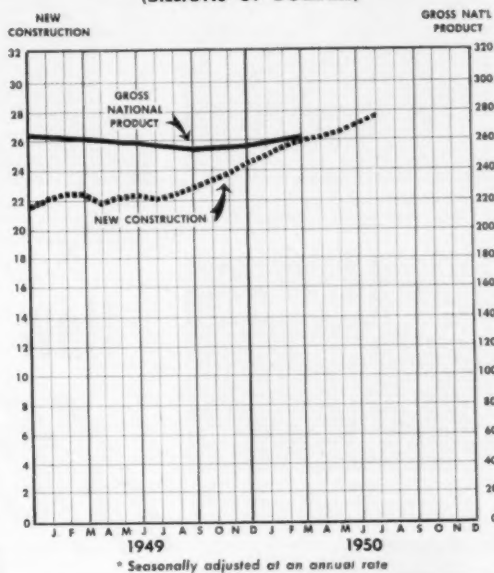
IN CANADA, SARNIA BRIDGE CO., LIMITED, SARNIA, ONT.
IN MEXICO D. F.—MACOMBER DE MEXICO S. A. CEDRO 500

V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK

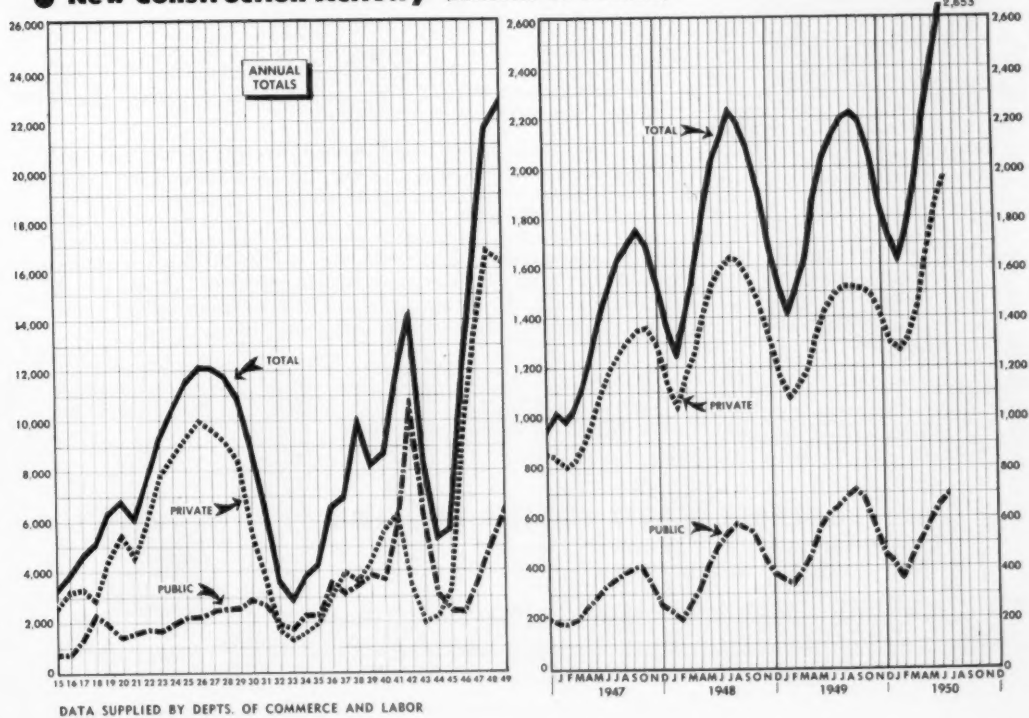
● **TOTAL Construction compared with Gross National Product**
(BILLIONS OF DOLLARS)



● **NEW Construction compared with Gross National Product***
(BILLIONS OF DOLLARS)



● **New Construction Activity** (MILLIONS OF DOLLARS)





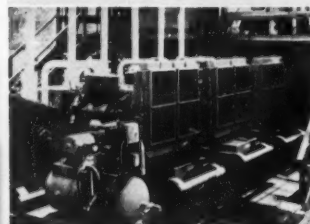
LOCOMOTIVES—Repowered with GM Diesel Torque Converter unit, this 20-ton locomotive hauls double the tonnage without ever shifting into low gear.



HOISTING—Converted from steam to GM Diesel Torque Converter power—estimated operating savings will pay repowering and overhaul cost in less than two years.



EARTH MOVING—Two 190 H. P. GM Diesel Torque Converter units give 34-ton Euclid 1-PPD rear dump a speed of 25.4 m.p.h. with full load.



DRILLING—"1/2 faster than with original engines," says owner of rig repowered with 3 GM "Twin" Diesel Torque Converter units.



LOGGING—Powered with GM Diesel Torque Converter unit, this Washington Iron Works yarder has yarded 140,000 bd. ft. per day.



WRITE FOR YOUR COPY

of 24-page illustrated catalog giving full details on design, operation and application of "The NEW General Motors Diesel Engine-Torque Converter Unit."

How to Get *MORE WORK* from your Equipment

Operators in every field report they get more work done in less time at lower cost with equipment powered by General Motors Diesel Engine-Torque Converter units.

The combination of a GM Diesel engine with an integrally built torque converter and fluid coupling provides a compact power unit which makes available maximum engine horsepower and torque regardless of the speed of the load. It delivers high torque for starting heavy loads and *automatically* shifts to fluid coupling when load requirements equal engine torque. Gear shifting is cut to a minimum—often eliminated. Smooth transmission of power through a fluid, protects both engine and driven machinery from sudden shock loads—prevents engine stalling under any load condition.

These efficient Diesel Engine-Torque converter units are available with 3-, 4-, and 6-cylinder engines, Twin 4 and Twin 6 multiple engines, rated at 64 to 294 B.H.P. See your GM Diesel distributor or write us for further information.

DETROIT DIESEL ENGINE DIVISION

SINGLE ENGINES... Up to 275 H. P. DETROIT 28, MICHIGAN MULTIPLE UNITS... Up to 800 H. P.

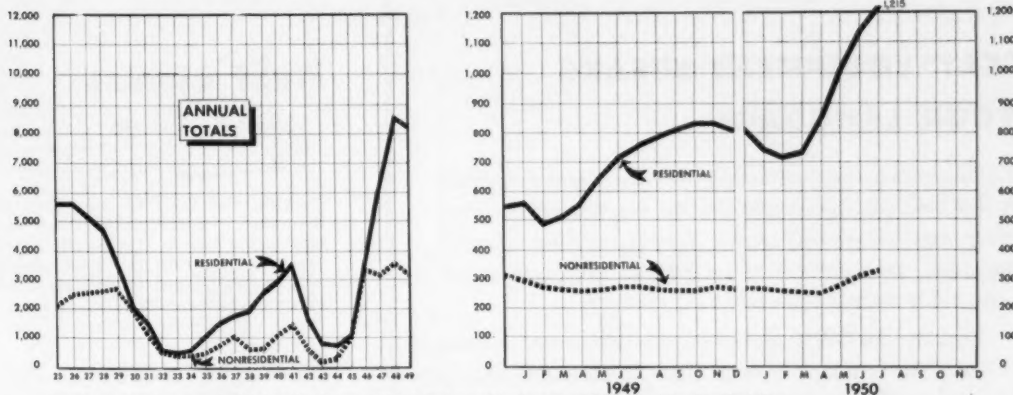
GENERAL MOTORS

DIESEL BRAVN WITHOUT THE BULK



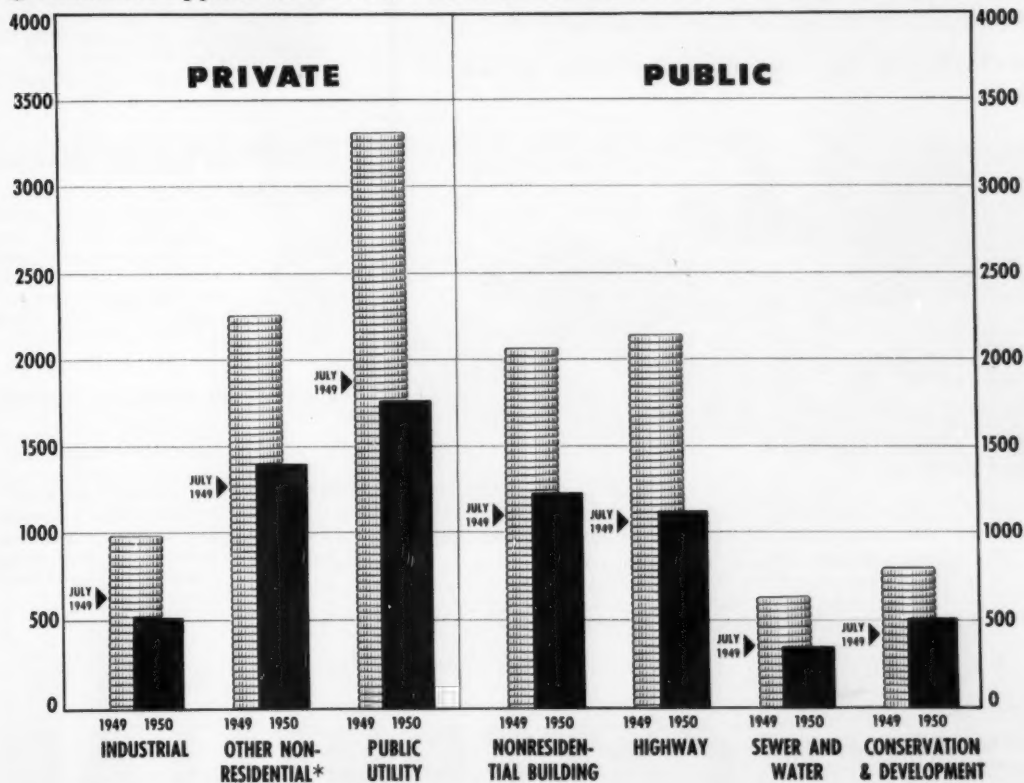
NEW CONSTRUCTION ACTIVITY

● Private Residential and Nonresidential Building* (MILLIONS OF DOLLARS)



* Residential excludes farm; Nonresidential includes industrial, commercial, institutional, and social and recreational building, but excludes public utility building.

● Selected Types: (CUMULATIVE, MILLIONS OF DOLLARS) 1949 and 1950 VOLUME THROUGH JULY



*Includes commercial, institutional, and social and recreational building

Where profits talk

"CAT" EQUIPMENT SPEAKS YOUR LANGUAGE

To the earthmoving contractor profits are mighty important. And a tractor-scraper outfit like the one shown here offers many ways of *boosting* profits. They're the kind of profits that show up in lower costs per yard, in more yardage per hour, and in more lifetime hours per machine.

Consider the DW10 alone — one of the greatest successes in heavy wheel tractor history. Look at the work-capacity features and the honest-to-goodness quality "Caterpillar" has built into it. (Nothing is too trivial or "too much trouble" to make these products the most profitable investments of their kind.) At the right are a few points of evidence.

CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS



SPEED PLUS VOLUME. At up to 24.5 miles per hour go as much as 11 heaped yards of quickly loaded clay and gravel with this perfectly matched "Cat" DW10 Tractor and No. 10 Scraper. Scene is on road surfacing project near Brookhaven, Mississippi.

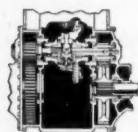
SEE the NEW
MOVIE FILM of
"CAT" DW10s in ACTION
at your dealer's.
Fascinating.
Convincing.

Profit IN STRENGTH



Main frame of the DW10—composed of two box-welded members securely fastened to transmission case—is 12 inches deep at rear (where load is carried). Has several times the resistance to twisting strains that channel sections of same size afford.

Profit IN QUALITY



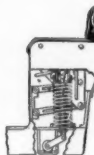
The DW10 embodies precision-built bevel gears, full-floating rear axle, crown-shaved "Hi-Electro" hardened final drive gears, welded steel transmission case, cast steel final drive housing, air-operated brakes.

Profit IN EASE OF OPERATION



Hydraulic booster steering gives the DW10 passenger-car turning ease; absorbs shock loads when taking rutted roads and downhill runs. Yet steering system is operative independently of booster feature. A valuable safety factor!

Profit IN OPERATOR COMFORT



The DW10 is built for easy, safe driving. Besides fingertip steering, excellent visibility and handy controls, the DW10 provides easy riding through air-foam rubber seat cushion *plus* seat springs that are adjustable to operator's weight.

CATERPILLAR

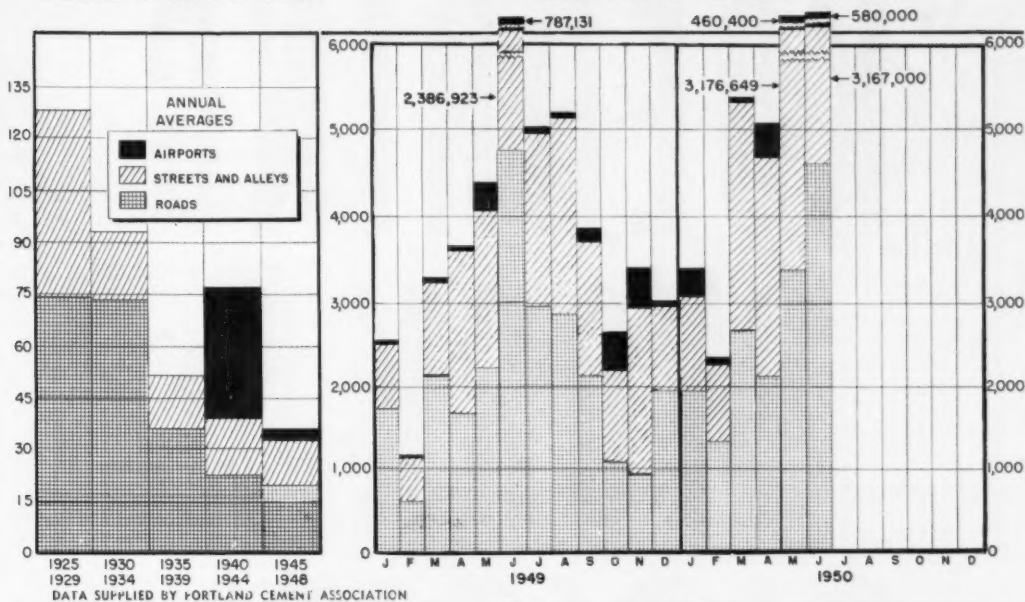
REG. U. S. PAT. OFF.

DIESEL ENGINES • TRACTORS • MOTOR GRADERS • EARTHMOVING EQUIPMENT

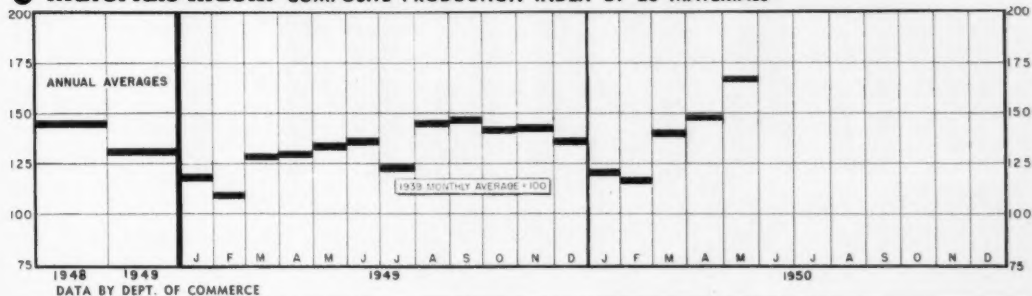
Concrete Surface Pavement Awards

MILLIONS OF SQUARE YARDS

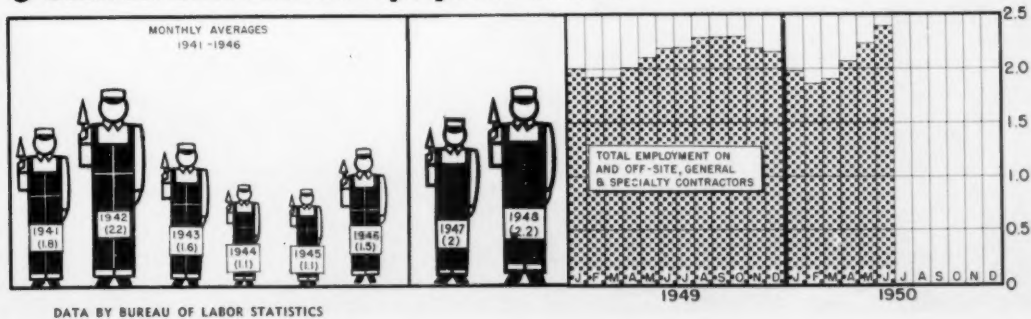
THOUSANDS OF SQUARE YARDS



Materials Index: COMPOSITE PRODUCTION INDEX OF 20 MATERIALS

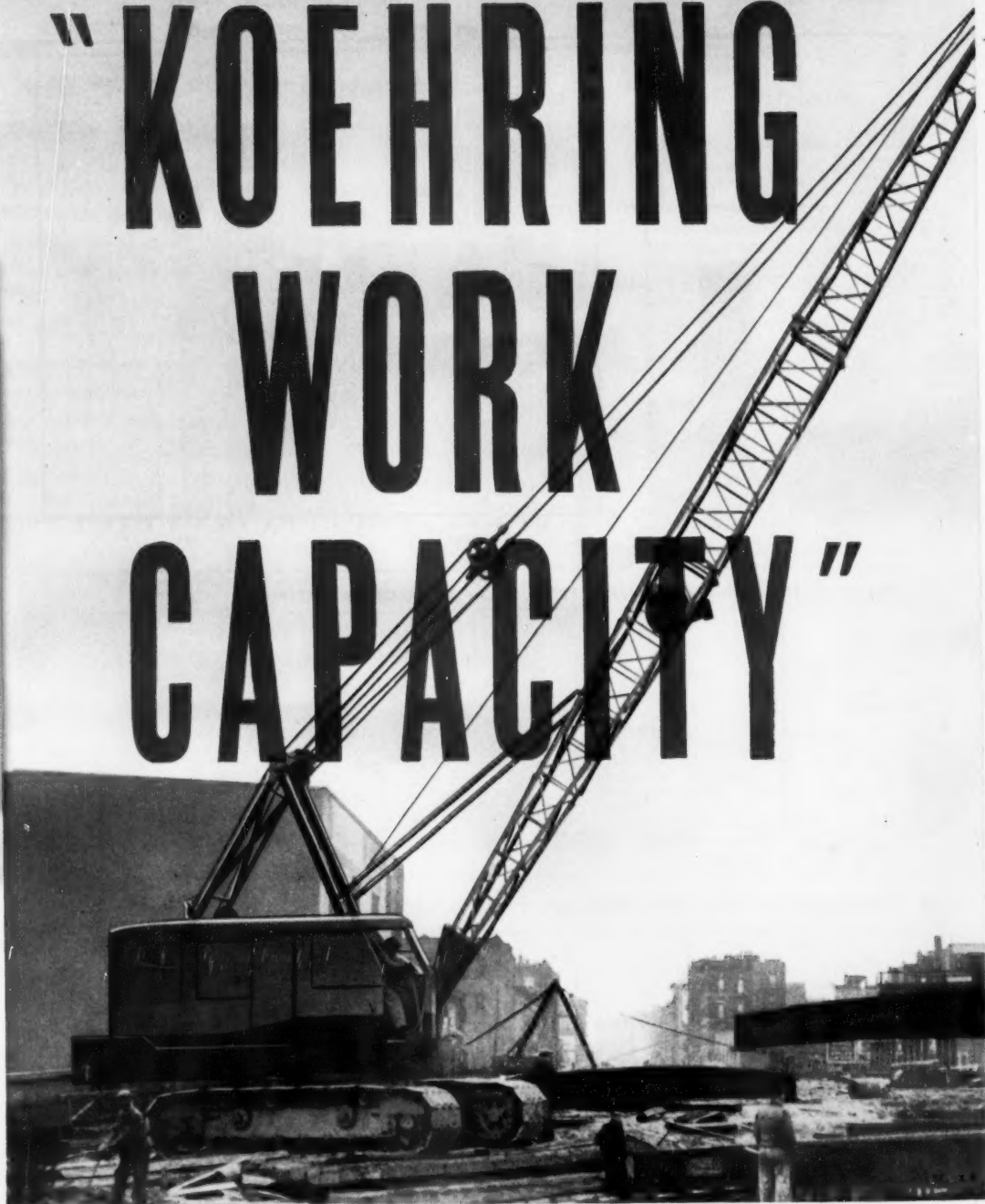


Contract Construction Employment (MILLIONS)



Measure by

"KOEHRING WORK CAPACITY"



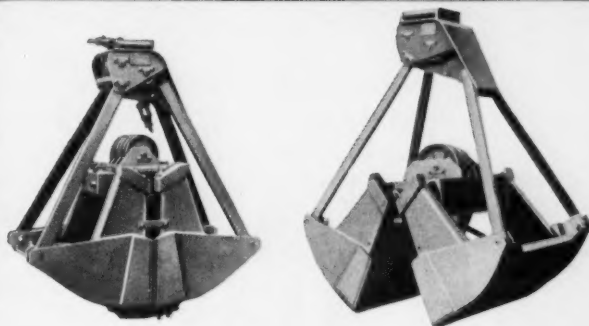
**Ask your
Koehring
Distributor
for specific
information**



**7¾ to 79½ TONS
LIFT CAPACITY**

**½ to 2½ yards dipper
capacity**

**KOEHRING
COMPANY**
MILWAUKEE 16, WIS.
Subsidiaries:
JOHNSON • KWIK-MIX • PARSONS



Johnson BIG PAYLOAD Clamshells

You get big payload performance with Johnson Clamshell Buckets because all-welded construction keeps center of gravity low . . . concentrates digging power on lips and teeth for maximum penetration and capacity loads every bite. Hard manganese cutting edge stays sharp, gets tougher with use. Heavy-duty strength . . . free-running sheaves, protected from dirt . . . fast, clean dump, all keep costs low, production high. 3 types: Wide Rehandling, General Purpose, Heavy-Duty Digging . . . sizes: ¾ to 2½ yards.

C. S. JOHNSON COMPANY
Champaign, Illinois
Koehring Subsidiary



Trenchliner* Sidesteps Obstructions

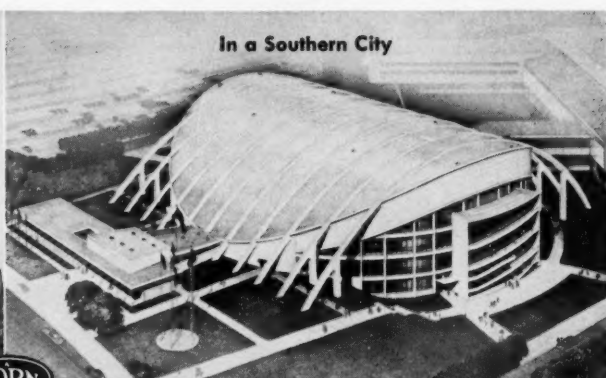
Digging boom of the Parsons 221 Trenchliner rides on rollers . . . slides easily from side to side across full width of machine. That's why this heavy-duty trencher can cut as close as 10" to side obstructions. Arc-type spoil conveyor shifts by power to either side. The 221 digs up to 8' deep . . . 16" to 36" wide. Write for descriptive bulletin giving complete facts. Ask, too, about smaller Model 80 for off-street connections, bigger Models 250 and 310, and 200 wheel Trenchliner.

*Trademark Reg. U. S. Pat. Off.

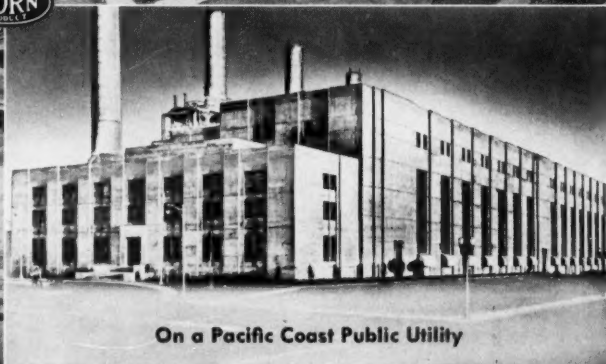
THE PARSONS COMPANY
Newton, Iowa
Koehring Subsidiary



At a Resort City



In a Southern City



On a Pacific Coast Public Utility

formfilm

For Protective Coating of Plywood Forms

**eliminates
oil staining
and reduces rubbing
costs**

**All Over America
Contractors Report**

- Increased speed of form handling
- Increased form use without recoating
- Increased life of forms
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"Rubbing costs reduced, grain raise eliminated."

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GENTLEMEN:

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COMPANY _____

ADDRESS _____

CITY _____ STATE _____

For Moderate Income Families in Large Cities

(Formerly referred to as the "Cost of Living Index," compiled by the Bureau of Labor Statistics)

This table indicates the average changes in retail prices of selected goods, rents and services bought by the average family of moderate income from April 15, 1948 to June 15, 1950.

They are presented here for use by employers who may wish to take these cost of living data into consideration when contemplating adjustments of wages based on increased living costs.

The Bureau of Labor Statistics surveys 10 key cities every month and 24 other large cities quarterly. Prices are obtained on food, fuel, apparel, house furnishings and miscellaneous goods and services. Rental information is obtained quarterly only for all cities. The computations are based on the indexes for the years 1935-39, which are taken as the average of 100 points.

	1948			1949			1950		
	APR. 15	MAY 15	JUNE 15	APR. 15	MAY 15	JUNE 15	APR. 15	MAY 15	JUNE 15
Average.....	169.3	170.5	171.7	169.7	169.2	169.6	167.3	168.6	.....
Birmingham, Ala.....	172.7	173.7	174.7	171.6	171.4	172.1	167.7	169.0	171.1
Mobile, Ala.....	.....	.....	173.5	.....	.....	170.3	.....	.....	167.4
Los Angeles, Calif.....	169.3	169.1	168.8	171.2	169.6	168.7	166.9	166.7	166.7
San Francisco, Calif.....	.....	.....	174.2	.....	.....	173.7	.....	.....	173.1
Denver, Colo.....	168.5	.....	.....	169.9	.....	.....	165.7	.....	.....
Washington, D. C.....	.....	166.7	.....	.....	165.3	.....	.....	165.2	.....
Jacksonville, Fla.....	.....	.....	178.3	.....	.....	174.9	.....	.....	176.7
Atlanta, Ga.....	.....	170.8	.....	.....	170.5	.....	.....	169.3	.....
Savannah, Ga.....	177.6	.....	.....	174.9	.....	.....	170.9	.....	.....
Chicago, Ill.....	172.1	174.9	176.2	175.0	174.2	175.9	172.9	175.3	176.4
Indianapolis, Ind.....	172.5	.....	.....	171.9	.....	.....	170.9	.....	.....
New Orleans, La.....	.....	176.5	.....	.....	172.5	.....	.....	171.5	.....
Portland, Maine.....	.....	.....	167.4	.....	.....	165.8	.....	.....	164.5
Baltimore, Md.....	.....	.....	176.1	.....	.....	174.2	.....	.....	174.3
Boston, Mass.....	163.6	164.1	166.1	162.4	162.2	163.3	162.3	163.3	166.2
Detroit, Mich.....	171.8	173.2	174.5	171.1	171.6	172.0	169.5	171.4	174.2
Minneapolis, Minn.....	.....	.....	171.4	.....	.....	169.1	.....	.....	169.2
Kansas City, Mo.....	163.3	.....	.....	163.3	.....	.....	161.1	.....	.....
St. Louis, Mo.....	.....	.....	172.1	.....	.....	169.8	.....	.....	169.7
Manchester, N. H.....	172.0	.....	.....	170.6	.....	.....	167.1	.....	.....
Buffalo, N. Y.....	167.2	.....	.....	168.3	.....	.....	166.3	.....	.....
New York, N. Y.....	167.0	167.5	169.1	168.1	166.8	167.0	164.5	165.4	167.0
Cincinnati, Ohio.....	170.8	172.3	173.5	170.7	169.1	170.5	167.3	169.7	171.2
Cleveland, Ohio.....	.....	173.7	.....	.....	171.5	.....	.....	170.1	.....
Portland, Ore.....	175.8	.....	.....	177.6	.....	.....	174.8	.....	.....
Philadelphia, Pa.....	169.3	170.4	172.1	169.0	169.9	169.2	166.0	167.1	169.7
Pittsburgh, Pa.....	171.9	173.5	175.7	173.0	172.9	173.1	170.1	172.0	173.4
Scranton, Pa.....	.....	170.2	.....	.....	168.4	.....	.....	167.3	.....
Memphis, Tenn.....	.....	.....	174.7	.....	.....	173.5	.....	.....	169.9
Houston, Texas.....	171.4	171.5	172.5	171.0	170.6	170.5	171.9	172.4	173.1
Norfolk, Va.....	.....	171.9	.....	.....	170.3	.....	.....	170.9	.....
Richmond, Va.....	163.4	.....	.....	164.2	.....	.....	161.9	.....	.....
Seattle, Wash.....	.....	174.3	.....	.....	172.5	.....	.....	171.8	.....
Milwaukee, Wis.....	.....	171.1	.....	.....	169.3	.....	.....	170.9	.....

BLAW-KNOX steel forms

save one costly concreting operation

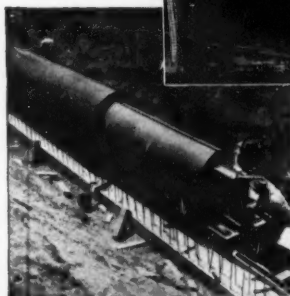
on a

BIG TUNNEL JOB

Original specifications on this big tunnel concreting job called for four operations . . . pouring side walls, placing arched roof, then the ceiling slab, and the floor. Collaborating with the contractor, Blaw-Knox engineers demonstrated how Blaw-Knox collapsible Steel Forms could be combined to permit concreting of side walls and roof arch in one operation. One step in construction was saved, and the necessity of using an expensive copper water stop between the wall and the arched roof was eliminated. The time saved expedited completion of the job. A daily concreting progress of 50 ft. was obtained by telescoping 50 ft. units of combined side wall and arch forms. Such Blaw-Knox consultation service in planning profit-making construction jobs as early as the blueprint stage is available to any contractor without obligation.



Right—Typical of the wide variety of jobs on which Blaw-Knox Steel Forms are used, this super highway viaduct was built with three sets of Blaw-Knox steel centering which carry the forms for the arch ribs.



Left—Blaw-Knox Steel Forms speed construction of a small sewer. Some of the recent typical jobs where Blaw-Knox forms and engineering service were used include: Brooklyn-Battery Tunnel, West Rock Tunnel (New Haven), Bull Shoals Dam, Delaware Memorial Bridge, Squirrel Hill Tunnel, Parkersburg Floodwall and many others.

TOUGH, UNUSUAL PROBLEMS SOLVED BY BLAW-KNOX ENGINEERING

EXPERIENCE As the original and most prominent manufacturer of Steel Forms for heavy construction, Blaw-Knox has been called upon to solve many tough and unusual concreting problems. The experience gained over 40 years has resulted in an engineering service unequalled for helping you obtain the most efficient forms for your particular job plus simplified forming methods that save time and money. Whatever your concreting problems, from tunnels to building big dams or bridges, to pouring small sewers or foundations, Blaw-Knox engineering skill and experience is at your service. Write today for advice or information, or ask for Bulletin 2035.

BLAW-KNOX

BLAW-KNOX DIVISION OF BLAW-KNOX CO., Formers Bank Bldg., Pittsburgh 22, Pa.
New York • Chicago • Philadelphia • Birmingham • Washington



Sidelights for Contractors

By John C. Hayes, Legal Adviser

Taxes

Proposed Legislation.—As passed by the House of Representatives, the proposed Revenue Act of 1950 provides for substantial reductions in war excise taxes, including those on transportation of property, transportation of persons, and telephone and telegraph communications. The loss of revenue would be substantially made up by adjustment in the corporate income tax rates and by loophole-closing measures. Final passage of the measure is dependent upon its approval by the Senate and the President, which may not be forthcoming.

Powers of Appointment.—Public Law 578, approved by the President on June 27, 1950, extends for one more year the time within which certain powers of appointment may be released by the donees of the powers without incurring estate or gift tax liability with respect to any property subject to such powers.

Interest on Deficiency.—The Bureau of Internal Revenue has published a ruling that interest and penalties assessed and collected in connection with a federal income tax liability should not be credited or refunded even though such tax liability is reduced or eliminated by net operating loss carry-backs. This ruling is based upon the Supreme Court decision to like effect reported in the March issue of "Sidelights."

Rental Accrued to Partner.—Where two contractors entered into a partnership agreement for a construction project, leasing their equipment to the partnership on the understanding that the rentals were partnership expenses to be credited to the partners as earned regardless of partnership profits, a District Court decided that the amounts paid for equipment rental were a partnership expense rather than a distribution of partnership profits and were properly deductible by the partnership and reported by the partner in the year accrued.

Earmarked Funds.—Although as a general rule an amount received as a

prepayment of business expenses constitutes income, the Tax Court concluded that funds received by a manufacturer from its dealers under a plan to pay the cost of an advertising campaign were not taxable to the manufacturer on the excess of current receipts over expenditures since they did not belong to the manufacturer but were in effect a trust fund.

Deductible Loss.—The Tax Court has held that a cash basis taxpayer who gave his promissory note to another pursuant to his obligation to bear half of investment losses and expenses, the investments having been made by the other but taxpayer agreeing to stand half the losses in return for a right to half of any gains, should deduct the loss in the year of his payment of the note.

Children's Trusts.—Finding that trusts set up by a father for his children and to which he had transferred undivided interests in certain real estate, had entered in good faith for business purposes into a partnership with the father and other owners of the property for the development and rental thereof, a Circuit Court of Appeals upheld the trusts as valid tax entities and as real partners for income tax purposes.

Kickbacks.—On the ground that contracts against public policy are void, the Tax Court has refused to allow the deduction of payments as ordinary and necessary expenses when made by an optical company to physicians referring patients to it for the fitting of eyeglasses. The court noted that such practice tended to increase cost and ran counter to the ancient maxim that no man can serve two masters.

Transportation Tax.—The Commissioner of Internal Revenue has indicated that he no longer will regard the tax on transportation of property as inapplicable to freight bills for a shipment between two points in the United States if paid in Canada by a bona fide employee of the shipper. While the tax statute reads, "amount paid within the United States," the Commissioner feels there is no doubt that Congress

meant to include all domestic shipments where all the transactions in connection with shipments of goods normally take place within the United States.

Public Contracts

Liquidated Damages.—Under a ruling by the Comptroller General, the General Services Administration may not legally remit liquidated damages provided for under contracts for construction or repair of public buildings or public works entered into subsequent to July 1, 1949, the effective date of the Federal Property and Administrative Services Act, since such authority thereunder is given to the General Accounting Office.

Labor Supply.—Where the government had assumed control of labor in a critical area by requiring labor to be furnished by referrals from the government, and due to an alleged labor dispute refused to refer workmen to a contractor engaged in constructing a levee under public contract, the Court of Claims held that the doctrine of sovereign immunity does not protect the government from liability for damages suffered by the contractor from the required use of an unskilled and inadequate labor force resulting in large financial loss.

Competitive Bids.—A failure by a government contracting agency to forward a protest by an unsuccessful bidder to the General Accounting Office for consideration prior to award of the contract, does not, in the opinion of the Comptroller General, invalidate the award of the contract to the successful bidder.

Renegotiation.—Congress intended the Renegotiation Act as "over-all" renegotiation, the Tax Court states, and the act's definition of "sub-contracts" was not limited to the first tier of sub-contractors, but includes any purchase order or agreement to perform all or any part of the work, or to make or furnish any article, required for the performance of another contract or sub-contract.



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Long on length...



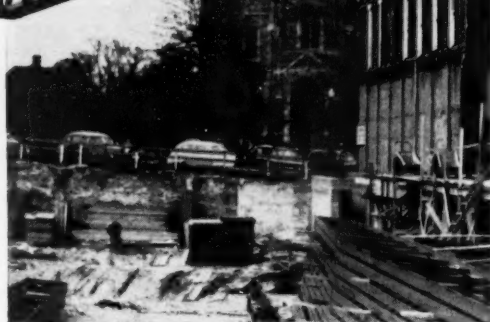
Truscon "Ferrobord" Steeldeck being used with "Clerespan" Joists for ideal fire-resistant roof construction.



Truscon "Clerespan" Joists in Heindel Oldsmobile Garage, Youngstown, O.



Truscon "Clerespan" Joists used in Adolphus Garage, Dallas, Texas.



Truscon "Clerespan" Joists were used to obtain large unobstructed areas in the Star Market, Newtonville, Mass.

short on costs

Impart a sweeping new airiness to your structures...endow them with spacious floor areas unobstructed by intermediate supporting columns or pillars. Plan with Truscon "Clerespan" Joists, and get up to 80-foot clear reaches with adequate safety. Long spans such as these permit more efficient arrangement of partitions, display counters, stocks, machinery, etc., and make possible the development of large, free, floor expanses for garages, bowling alleys and similar requirements. The number of structural elements required is substantially reduced. The shallow depth of "Clerespan" Joists also permits a saving in masonry work by reducing the required height of building walls. Free illustrated literature on Truscon "Clerespan" Steel Joists sent on request.



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Our Industry and Defense

AS THIS issue went to press, three engineer construction battalions, part of the 83 reserve construction units sponsored by chapters and branches of The Associated General Contractors of America, have been alerted for imminent call to active duty.

A number of other units have been undergoing training in camps throughout the country, or at the Engineer School at Fort Belvoir, Virginia.

The alerting of these three battalions, each of which immediately will be built up to its full strength, is the latest chapter in a story which began on May 26, 1947.

On that day, A.G.C. President F. W. Parrott and Managing Director H. E. Foreman represented the association at a conference of representatives of the nation's top industrial, labor and educational organizations at the Pentagon at the invitation of the then Secretary of War Patterson. General of the Army Dwight D. Eisenhower, then Chief of Staff, and other high-ranking officers explained the Army Affiliation Program and its importance to national defense.

Subsequently, after a series of conferences between representatives of the A.G.C. and the Corps of Engineers, the association was requested to sponsor 100 reserve construction units as "the backbone" of the Corps' affiliated program. The object was to utilize skills developed in civilian industry to assist the Army in developing units that would be immediately available when the President or Congress proclaimed an emergency.

Accordingly, the Governing and Advisory Boards at their fall meeting in Des Moines, Iowa, endorsed the participation of the A.G.C. in the program, thereby accepting on behalf of the association its obligation to play a vital role in preparing the construction industry for national defense. The boards stated, in part:

"An honor has been conferred upon the association and its chapters and branches, by the invitation to participate in this program which is an integral part of the nation's plans for defense. It is also an obligation to be discharged faithfully."

The boards recommended that the chapters and branches immediately cooperate with appropriate Army officers in sponsoring and assisting in the training of affiliated units which could be mobilized immediately in the event of a national emergency.

In less than eight months, chapters and branches had signed sponsorship agreements for 84 of the 100 units allotted to the A.G.C. This accomplishment was reported officially to the Department of the Army one year after the original Pentagon conference, whereupon Secretary of the Army Kenneth C. Royall expressed the service's gratitude "for the spirit and manner in which your association has undertaken this effort to strengthen our national security."

Subsequently, the number of units allotted to the association was cut back by changes in the constituency of the Organized Reserve Corps.

Today, the chapters and branches of the A.G.C. have

under sponsorship 82 activated reserve construction units, consisting of engineer construction battalions and groups, engineer aviation battalions and groups, port construction and repair groups, and a heavy equipment company. At full strength, these units would account for thousands of officers and men, the exact number of which cannot be disclosed.

The association can justly be proud, not only of this remarkable accomplishment, but also of its work in other areas of national defense.

An initial meeting was held July 21 by the new A.G.C. Committee on National Defense with representatives of government agencies to discuss the means of making most effective use of the general contracting industry in the current mobilization program. (Page 24)

This committee was requested to keep in close contact with the agencies for consultation on construction problems and policies.

Controls Again!

ECONOMIC controls are being put in force to conserve materials for national defense, and more stringent controls were under consideration in Congress as this issue went to press.

A controlled economy is contradictory to the American way of life, and every true American despises shackles on his freedom. But, conversely, we all are willing to go to whatever lengths are necessary to insure the success of a united effort to overcome any threat to our national freedom and way of life in the long run.

As for the construction industry, the Korean struggle mushroomed into the economy at a time when the industry was engaged in the highest peacetime volume in its history, estimated at \$14.4 billion during the first seven months of 1950.

The first action to restrict the volume of civilian construction was the tightening of credit on housing. It is reasonable to assume that further restrictions may be made on civilian construction, and the exercise of other controls over the economy would affect this industry both directly and indirectly.

Regrettable though it may be, various forms of controls are on the verge of adoption. In view of their imminence, it should be pointed out that the nation has fresh experience from its ordeal during and following World War II. The lessons learned and the mistakes made should not be forgotten in the haste of making provision for these controls and their administration.

One maxim is that a separate, new agency for the administration of controls would be more susceptible to liquidation after they are no longer needed, because of its temporary nature.

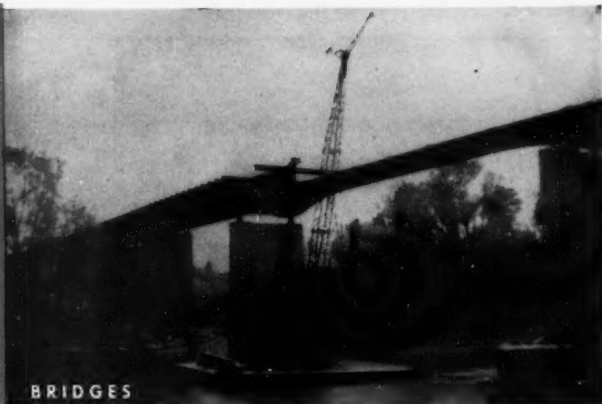
Also, those who see economy in the parceling out of controls to existing agencies and departments should take into consideration the impairment of efficiency in their regular functions, as opposed to the efficiency that can be obtained in a new, temporary agency set up for one purpose.

Fabricators and Erectors of *Structural Steel*

• Statistics show the steel industry had facilities to fabricate and erect over two million tons of steel in 1949. America found Allied ready with three fully equipped plants, operating under unified control, with abundant capacity to tackle a big share of the job. Here expert crews fabricate and erect bridges and buildings from the blueprint stage to finished structures. We invite you to consult Allied on any structural job that's pending . . . large or small. Send us your specifications for estimates.



Allied:
Clinton Bridge Corporation
Sage Structural Steel Corporation
Midland Structural Steel Corporation



BRIDGES

Allied engineers adapt methods to the job, often employing water erection with floating equipment to shorten bridge-building hours.



INDUSTRIAL BUILDINGS

Similar equipment in each of Allied's three plants speeded up fabrication of structurals for this giant industrial plant.



HIGHWAY STRUCTURES

3250 Tons of steel were fabricated by Allied for this California highway bridge . . . erected according to Allied's precision method.

» THAT PHRASE used by cautious forecasters, "predicated on no change in the international situation," went into effect last month, leaving the construction outlook for the remainder of the year as uncertain as the extent to which a controlled economy will prevail in the country by next fall.

The Korean trouble mushroomed into the domestic economy of the United States at a time when the construction industry was engaged in the greatest peacetime activity in history, with \$2.7 billion of new construction

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put in place during July for a total of \$14.4 billion during the first seven months of 1950. On the basis of this record and contracts already under way, a big construction year still is possible, discounting the possibility of extreme controls.

The size of prospective defense construction was not predictable early this month, pending appropriations, although it was assumed that the rehabilitation of defense facilities would constitute most immediate projects. However, a step-up in atomic and hydrogen bomb facilities was imminent.

Conservation of Materials

Civilian construction, naturally, will be curtailed to the extent considered necessary by Congress and the President, as dictated by the tempo of defense activity and further international changes. Shortages of materials already had been reported cropping up in June as building activity was climbing to a peak, and shortages can be expected to increase. Manpower difficulties, too, are looming with the prospect of recruiting workers for expanding defense production.

The first step taken in curtailing civilian construction was the tightening of credit on residential construction for the purpose of lopping off the peak of this type of building, which has reached unprecedented volume during the first seven months of this year.

The Reconstruction Finance Corporation also has announced its intentions of curtailing non-defense loans.

Rising prices in many commodities afforded fuel to moves for wage and price controls.

In the construction field, the Commerce Department reported that ce-

Controlled Economy Would Nip Construction's Peak Volume

• Curtailment of Housing First Direct Move

ment, lumber, brick and tile had reached a new high in price.

As to the federal civil public works program, volume as of August 2 seemed to depend, first, on whether Congress would vote full appropriations in the omnibus bill, and second, whether the President later would impose restrictions.

New York Program Cut

First reaction in local public works was the announcement August 2 of a drastic curtailment of New York City's extensive public works program to help finance that city's gigantic civil defense program. Two projects were sidetracked indefinitely, and a preliminary estimate of \$43 million was made for civil defense in the immediate future. There were no indications, however, of such drastic curtailments in other localities.

Housing Credit Restrictions

Federal agencies concerned with housing matters have initiated a national reporting system through their field offices to determine the effects of credit curbs imposed at the behest of the President. The National Housing Council, composed of these agen-

cies, will meet each two weeks to review effects and determine what additional steps, if any, are necessary.

Principal actions carrying out the President's instructions are:

1. Veterans required to pay at least five per cent of purchase price on insured loans, except new housing units on which construction began prior to July 19 and except under certain other circumstances.

2. Construction cost figures used in Federal Housing Administration and Veterans Administration offices to analyze property are frozen as of July 1, 1950.

3. Ratios of loan to value or loan to cost specified by FHA regulations under all insurance plans are reduced by five per cent of such value or cost; and dollar mortgage limitation on single family dwelling is reduced from \$16,000 to \$14,000.

4. Down payment of 10 per cent required on property improvement loans under Title I.

5. Public housing starts to be held to not more than 30,000 during the next six months.

Military and Alaskan housing are excluded from restrictions.

Agencies Directed to Reexamine Programs

• President Calls for Screening to Conserve Materials

» GOVERNMENT agencies were directed to reexamine civil public works construction programs to see how materials could be conserved for the defense effort. Following his mobilization message of July 19, President Truman on July 21 wrote to 14 federal departments and agencies in part:

"In order to adjust the programs of the federal government, I am writing to you and the heads of other agencies whose programs involve substantial use of materials and other resources needed in the defense effort. Please reexamine your programs giving particular attention to the extent applicable to the following:

"1. All civil public works, both direct federal programs and grants-in-

aid programs, should be screened with the objective, as far as practical, of deferring, curtailing or slowing down those projects which do not directly contribute to defense or to civilian requirements essential in the changed international situation set forth in my message.

"2. Consistent with the restrictive policy already in force for housing credit, other credit programs should be tightened. The only exceptions should be those which directly contribute to meeting our defense and international responsibilities.

"3. Procurement of supplies and equipment should be held to minimum amounts, especially purchases of motor vehicles, typewriters and other equipment using vital materials. . . ."

A.G.C. Committee on Defense Meets with Agency Officials

- Discuss Means of Effective Use of the Industry
- Fixed Price Contracts Recommended for U. S.
- Ample Capacity for Both Defense, Civilian Work

» THE COMMITTEE on National Defense of The Associated General Contractors of America and its advisers, appointed by President Walter L. Couse of Detroit, met in Washington on July 21st with representatives of government agencies to discuss the means of making most effective use of the general contracting industry in the current mobilization program.

Subjects discussed included:

The volume of defense construction, rehabilitation, maintenance and repair to be anticipated for the mobilization program, and for possible future international developments.

The procedures to be followed for the award and administration of defense construction contracts.

The problems which might be involved in securing adequate manpower, materials and machinery for defense construction.

The possibilities of other governmental actions such as establishment of systems for priorities, allocations, rationing, and others.

The requirements of the services to call to active duty officers and men skilled in construction operations who have been organized and trained in reserve construction units of the Army Affiliation Program, or who are in the Seabee reserves.

The procedures to be followed by the construction industry in disaster relief in the civilian defense program, in the event that action becomes necessary.

Committee to Continue

At conclusion of the meeting, the representatives of the government agencies responsible for the execution of defense construction recommended that the A.G.C. Committee on National Defense keep in close contact with the agencies, and be available upon need for consultation on construction problems and policies.

Pending passage of appropriation bills, no definite information could be given on the size of prospective defense construction programs. The immediate prospect is that most con-

struction projects will be the rehabilitation of various facilities throughout the country.

The agencies requested that contractors equipped to undertake defense construction contact district offices of the organizations who award such contracts, and do not come to Washington.

A.G.C. Memorandum

In a memorandum submitted to the government representatives, the association stated that prior to the start of World War II many experiments were tried before government agencies arrived at the policies which made it possible to mobilize the construction industry most effectively. Purpose of the meeting was to develop through discussions suggestions for policies and procedures which would permit prompt and effective mobilization of the industry's facilities for the present program.

Other information or recommendations made in the memorandum were:

The construction industry presently is engaged in the greatest peacetime construction program in history. The capacity of general contractors to handle construction quickly and economically is far greater than ever before. Competition in the industry is keen, and prices are surprisingly low.

The general contracting industry will be able to undertake any and all

construction required by prospective mobilization plans promptly and economically.

Defense construction will have an impact upon civilian construction. There is ample contractor capacity for both. But the materials shortages which have been developing may become more serious.

At the present time there is no need to stop any construction which is under contract. Increasing shortages of materials, or manpower, may make it necessary to postpone the start of new projects not essential to defense or necessary civilian activities.

The A.G.C. representatives present recommend that fixed price contracts be awarded wherever possible for defense construction in continental United States.

General contractors can operate most efficiently when their organizations and equipment are kept intact and they can exercise full control over operations of their projects.

Government Agencies Represented

Government agencies represented at the conference were:

Bureau of Yards and Docks, U. S. Navy

Corps of Engineers, U. S. Army
Deputy Chief of Staff, Materiel, Air Force

Office of Construction, Munitions Board

Production Division, Atomic Energy Commission

National Security Resources Board
Bureau of Public Roads.

A.G.C. Committee and Advisers

Members of the A.G.C. Committee on National Defense are its elected officers, as follows:

Walter L. Couse, Walter L. Couse

A.G.C. Units Training, Three Alerted

A number of the 78 reserve construction units sponsored by A.G.C. chapters in the Army Affiliation Program are participating in summer training, and three units have been alerted, according to latest reports. Some units either have trained, or are training at the Engineer School at Fort Belvoir, Virginia.

The A.G.C. national office has pointed out that 39 A.G.C.-sponsored units have been placed on the new troop list, leaving 39 units in the U. S. "pool."

Commanding officers and sponsors of those units in the pool which have attained Class B status, or which can attain this status within nine months, should write the commanding general of their army area in order to be assigned to the new troop list. (The newly reconstituted Organized Reserve Corps and the status of A.G.C.-sponsored units was explained in detail in the July 1950 *Constructor*, pages 113, 114, 118.)

& Co., Detroit, Michigan, President
G. W. Maxon, Maxon Construction Co., Dayton, Ohio, Vice President

D. A. Harmon, Harmon Construction Co., Oklahoma City, Oklahoma, Chairman, Building Contractors Division

N. K. Dickerson, Jr., Dickerson, Inc., Monroe, North Carolina, Chairman, Highway Contractors Division

John MacLeod, Maceo Corporation, Paramount, California, Chairman, Heavy Construction and Railroad Contractors Division.

Past Presidents Advisers

Advisers to the committee are the following past presidents who were in office during the defense or war periods from 1940:

H. B. Zachry, H. B. Zachry Co., San Antonio, Texas

M. W. Watson, Topeka, Kansas
William Muirhead, Wm. Muirhead Construction Co., Durham, North Carolina

H. A. Dick, Gilpin Construction Co., Portland, Oregon

W. S. Bellows, W. S. Bellows Construction Corporation, Houston, Texas

F. W. Parrott, C. F. Lytle Co., Sioux City, Iowa

D. W. Winkelman, D. W. Winkelman Co., Syracuse, New York.

Advisers to the committee who are also members of the Executive Committee are:

Gayle Armstrong, Armstrong & Armstrong, Roswell, New Mexico

Leo P. Richardson, W. E. Wood Co., Detroit, Michigan

Fred I. Rowe, W. L. Johnson Construction Co., Columbus, Ohio

W. Murray Werner, The Werner Company, Shreveport, Louisiana.

For World War II the construction industry completed projects valued at more than \$49,000,000,000.

The meeting again demonstrated what was proven so conclusively during the last war, that the continuing relationship between the construction industry and the National Defense Establishment, such as the execution of the civil functions program of the Corps of Engineers, has placed both in a mutually beneficial position to understand the functioning of each and be able to meet any defense needs with a minimum of confusion. Also, by reason of such mutual relationship, there have been developed through the A.G.C., 83 Affiliated Reserve Construction Units for the Army and Air Force.

Navy's Goal Is 70,000 Construction Men

• Would Be Nucleus for Expansion in Case of Full Scale War

» THE SEABEE Volunteer Reserve is seeking 70,000 experienced construction men to provide a satisfactory operating nucleus in the event of a full scale war.

The Navy has announced that men over the age of 25 can still enlist and receive petty officer ratings based on their civilian experience. The opportunity to join this standby Reserve is no longer open to those in the 19 to 25 age group who are now subject to induction under the Selective Service Extension Act of 1950.

Older Men's Opportunity

Older men in the construction trades who are qualified to join not only will retain their rating when and if they are called to active duty, but they will also have reasonable assurance that they will be assigned to Naval Construction Battalions for the building and defense of overseas bases.

About 60 different civilian construction skills are covered by the seven Seabee ratings open: builder, mechanic, steelworker, utilities man, construction electrician, driver, and surveyor. Volunteers will be placed on

inactive duty with no required drills or meetings, and may be called to active duty if required.

Those desiring to volunteer should contact the commanding officer of any Organized Reserve Construction Battalion Company or Volunteer Construction Battalion Reserve Unit, or any naval recruiting station.

Ratings and Pay

Enlistment is limited to men who have reached their 26th birthday but not their 45th. Veterans beyond the age limit may still qualify if their age does not exceed 44 plus the number of years of previous service. Navy veterans will be accepted up to the age of 50½ plus the number of years of naval service.

Depending on the kind and amount of civilian experience, skilled construction men can expect to be rated at some point in the scale between chief petty officer, with minimum active duty base pay of \$198.45 per month, and third class petty officer, with a minimum of \$117.60. Additional pay is given for dependents and for years of previous service.

Fast Work on Hospital

Construction work has been so rapid on the naval hospital at St. Albans, Long Island, that the structure is expected to be completed by next January, three months ahead of schedule, according to the Bureau of Yards and Docks, U. S. Navy.

The \$14,823,000 hospital—largest lump sum contract ever awarded by the Navy for hospital construction—will embody every modern development in the field, including air conditioned operating suites, a special type of terrazzo floors to eliminate explosions from anaesthetics, conduits for television, and a complete bedside radio system.

The facilities, being constructed by the Thompson-Starrett Company, Inc., A.G.C., New York City, include a six-story administration and treatment building, a two-story subsistence building, and six three-story ward buildings.

Original plans for the hospital were made before World War II, and some foundations had been laid when hostilities began.

Disaster Relief Course

Forty-four officer and civilian representatives of military installations throughout the East recently completed a three-week disaster relief course at the Bureau of Yards and Docks, conducted by the teaching staff of the U. S. N. School, Civil Engineer Corps, Port Hueneme, California.

Similar to that given at the school for regular officers and civilians, the course was set up for radiological defense of the naval shore establishment. It is standardized to the extent that a man transferred to a new station will know in general what his duties would be in the event of disaster.

William Gill, of the National Security Resources Board, told the students that it is hoped to establish civil defense policies at federal, state, and local levels as a means of coordinating the activities of the various agencies.

Rear Admiral Joseph F. Jelley and Captain A. D. Hunter, chief and deputy chief, respectively, of the Bureau of Yards and Docks, also addressed the class.

Truman Foresees Big Spending on Defense for Several Years

- Priorities, Allocations, Credit Controls Requested
- Baruch Group Proposals Exceed President's
- Standby Wage, Price Measure Being Readied

» ANNOUNCING that he proposed to ask at once for \$10 billion as an initial appropriation for military purposes, President Truman, in his message to the Congress on July 19 said he would also recommend heavier taxes soon.

After devoting considerable space in the message to a summary of the Korean war, the President pointed to the possibility that armed aggression may break out in other areas.

Among the things requested by the President were:

Immediate authority to establish priorities and to allocate vital materials; to limit the use of materials for non-essential purposes; to prevent inventory hoarding, and to requisition vital materials, particularly excessive and unnecessary inventories.

Asks Credit Controls

He further asked for immediate authority to control consumer credit, credit used for commodity speculation and privately financed real estate credit. He also asked authority to make production loan guarantees, long-term contracts and direct loans to encourage production of materials in short supply.

In asking removal of the statutory limit on the size of the armed forces, the President announced that he had authorized the calling of as many units of the national guard and individuals of the reserves as may be needed.

Immediate enactment of the \$1.2 billion foreign military aid bill pending as of August 1 in the House was asked. The message pointed out that since nations aligned with us in the Mutual Defense Assistance Program will need to divert additional economic resources to defense purposes, they will require more aid from us. "It may be necessary to assist other nations whose security is as vital as our own," he said. Consultations are in progress with other Atlantic Pact nations and as soon as it is determined how much each of these nations needs, the President will ask Congress for

the money necessary to the attainment and maintenance of our common strength at an adequate level.

Higher Spending for Years

The President gave no figures on the matter of higher taxes, but announced that they should be increased more sharply than he had previously recommended. He held that heavier taxes would offset inflationary pressures and make general controls less necessary. The tax burden should be distributed fairly among different groups of individuals and business concerns, and should have as its major aim, the elimination of profiteering.

The Chief Executive pointed out that "we must recognize that it will be necessary for a number of years to support continuing defense expenditures, including assistance to other nations, at a higher level than we had previously planned. Therefore the

economic measures we take now must be planned and used in such a manner as to develop and maintain our economic strength for the long run as well as for the short run."

The message was not without its warning. "If we are to be successful, there must be sensible and restrained action by businessmen, labor, farmers and consumers. The people of this country know the seriousness of inflation, and will, I am sure, do everything they can to see that it does not come upon us. However, if a sharp rise in prices should make it necessary, I shall not hesitate to recommend the more drastic measures of price control and rationing!"

Increased strength of the military forces fell into three categories, the President declared. Not only do we need to send additional men, equipment and supplies to General MacArthur as rapidly as possible, but the world situation is such that we must also increase substantially the size and matériel support of our armed forces over and above the increases needed in Korea. The third category called for assistance to the free nations associated with us in common defense in augmenting their military strength.

Certain Controls Asked

Chairman Symington of the National Security Resources Board, appearing before the Senate and House banking committees in support of the administration's industrial mobilization bill (S. 3936 and H.R. 9176) said the measure would restore to the President all the powers he held during World War II, except for rationing, wages and price controls.

The NSRB chairman described the controls as essential to reduce inflationary pressure. Prices on 28 basic commodities had advanced 10 per cent since the outbreak in Korea, he said. However, the authority for rationing and price controls should not be necessary immediately if panic buying was avoided, he added.

Later on the Senate floor, Senator Taft (R., Ohio) declared, "Arbitrary powers should not be granted unless they are necessary for the particular crisis we face." He said that price controls and rationing had been omitted from the present request for controls on account of their unpopularity, but he added, "If the other controls are granted, these (rationing and price control) must inevitably follow after election."

The administration plans to assign

Standby Wage, Price Bill

The apparent desire of Congress to pass legislation providing for standby wage and price control authority early this month had Administration officials hurriedly drafting such measures. While contending that such drastic controls are not necessary at this time, the President's advisers wanted to go on record with the type of standby authority they prefer. The President told Congressional leaders that he will accept such standby power if Congress insists on giving it to him.

Under the Administration plan, the emergency authority becomes effective only when the President gives the word. This could mean that he might use it immediately or it could mean that Mr. Truman might never use it.

new war functions to existing agencies wherever possible to avoid creating new agencies, Mr. Symington announced. Some quarters contend that a special agency can be more easily disposed of once the crisis has passed.

Baruch on Total Mobilization

Bernard Baruch, testifying before the Senate Banking Committee, expressed the belief that Congress should immediately freeze all wages, prices and rents, increase taxes and ration essential goods. He said the situation warranted an over-all ceiling across the entire economy. Total mobilization should be done now "while peace can still be saved."

Mr. Baruch said that the industrial

mobilization bill is vital, but does not go far enough.

On July 28, the House banking committee approved the Administration's industrial mobilization bill (H.R. 9176) by a vote of 20 to one, after rejecting a motion the day before to include wage and price controls and rationing by a vote of 10 to nine.

The \$10 billion for defense purposes mentioned by President Truman in his message to Congress, July 19

was formally requested on July 25 in a letter to Speaker Rayburn of the House. This fund, now \$10,486 million, is to be divided as follows:

Army—\$3,063 million
Navy and Marine Corps—\$2,648 million

Air Force—\$4,535 million
Other Defense Department activities—\$240 million.

The estimates call for an increase of 600,000 in military personnel bringing the total up to 2,100,000 men.

Lucas Act Amendment Passed by Senate

• House Committee also Reports Out Revised Relief Measure

Situation on Taxes

President Truman, in a letter to Chairman George (D., Ga.) of the Senate Finance Committee on July 25 asked for a \$5 billion increase in corporate and individual income taxes to be effective until a more comprehensive tax program can be prepared.

Senator George took this request up with his committee on August 2 and expects to complete the job in a few days.

It is planned to incorporate the President's emergency tax request in the excise tax reduction bill (H.R. 8920) already passed by the House and pending before the Senate's Finance Committee.

Senator George expressed doubts that the committee would agree to the feature suggested by the President that corporation taxes be made retroactive to January 1, 1950. He also announced that his committee would not take up excess profits taxes until next year.

Representative Doughton (D., N.C.) chairman of the House Ways and Means Committee, said that his committee will discuss the bill after the Senate committee had approved the measure.

It was conceded by informed circles that the \$5 billion tax increase would be only the beginning.

» THE SENATE in the middle of July passed an amendment to the War Contractors Relief Act introduced by Senator McCarran (D., Nev.), and favorable action by the House was expected early this month after the bill was reported out by the Judiciary Committee.

The measure, S. 3906, was revised to meet the objections of President Truman, outlined in his message of June 30 vetoing the original amendment of the Lucas Act (H.R. 3436). The Senate bill was reported by the House committee after Representative Walter (D., Pa.) withdrew his bill which incorporated an accrued interest provision.

If finally enacted, the bill will amend the Lucas Act by adding a new Section 7 which will:

(1) Direct departments or agencies to reconsider claims heretofore filed in accordance with the provisions of the act and rejected or disallowed in whole or part, "on request filed not more than sixty days after the effective date of this section and after affording claimants reasonable opportunity to amend or supplement their claims . . ."

(2) Allow claims payable under the act to the extent that they include losses "with respect to which in a writing submitted to a department or agency concerned on or before August 15, 1945, the claimant (a) requested relief available under the First War Powers Act, (b) demanded payment thereof, or (c) gave notice of such sustained or impending loss. . . ." This provision, however, will not limit or exclude other requests for relief otherwise sufficient under section 3.

(3) Include claims of subcontractors

on the same basis as those of prime contractors if the request for relief, demand for payment, or notice of sustained or impending loss was submitted in writing by such claimants on or before August 14, 1945, to either the department or agency concerned or the prime contractor or other subcontractor involved.

(4) Allow as costs the reasonable salaries of working partners or proprietors of unincorporated claimants during the period of performance of the contracts or subcontracts involved.

(5) Preserve jurisdiction of the courts over suits now pending, and not require resubmission by a plaintiff of his claim to the department or agency concerned. However, any department or agency will not be prevented from reconsidering any claim for the purpose of paying it or agreeing on a compromise or settlement, to the extent that after such payment or settlement, court actions "shall thereupon be limited accordingly or dismissed as the case may be."

(6) Permit plaintiffs in any court cases previously filed under the act to, upon motion filed within 60 days after effective date of the section, amend their complaints or petitions, vacate any adverse judgments or rulings, or revive actions in the courts.

(7) Redefine contractors, subcontractors, and material men with respect to partnerships, joint ventures, business associations, and corporations to refer to an entity and not to the individual members thereof.

(The original amendment to the Lucas Act passed by Congress and the President's reasons for vetoing it, were explained in the July CONSTRUCTOR, pages 31-32.)

Congressional Economy Bloc Hits at Civil Public Works

- Paring Amendments Defeated in Senate
- House Group to Review Non-Defense Spending

» AS THE KOREAN situation grew more serious, and heavy defense appropriations were asked, moves got under way late in July to trim non-defense items from the national budget, with some members of Congress attacking civil public works.

While amendments by a few Republican Senators and Democratic Senator Douglas of Illinois to pare natural resources projects were defeated in the Senate, a move was initiated early this month in the House to review non-defense spending plans with the aim of making substantial cuts in the \$29 billion omnibus bill which already had been passed by that body.

This latest move was made by the House Appropriations Committee in a resolution to review items under its jurisdiction "for the purpose of ascertaining which programs or activities may be curtailed or deferred in the light of the necessity of making the maximum amount of federal revenues available for national defense and thereby minimize inevitable increases in taxes and the public debt." Any cuts would be incorporated into a deficiency bill that will carry at least \$11 billion in emergency defense spending, \$4 billion in arms aid, and another \$990 million for Navy plane buying.

Taber Attacks Public Works

Representative Taber (R., N. Y.) announced he was shooting for a billion-dollar cut, with the rivers and harbors and flood control section of the bill "a good place" to start.

The Senate bill, carrying \$32.5 billion in cash and \$2.2 billion in contract authority including added foreign aid funds, on which debate began July 11, was expected to clear that body soon after press time. Accent in the debate revolved around various economy proposals after the Senate Appropriations Committee had eliminated a House amendment that would have permitted federal agencies to fill only 10 per cent of the vacancies occurring in government jobs. The debate was marked by bitter attacks on river and harbor and flood control ex-

pensitures by Senator Douglas, who also this month continued his attack in an article in a magazine of national circulation.

Senator Harry F. Byrd (D., Va.) told the Senate that Russia is waging a war "of economic attrition" against the United States aimed at the ruin of the free enterprise system. Pointing to the deficit spending policies of the Administration in the past five years, he urged members of Congress to whittle every dollar of non-essential domestic spending from the bill to make ready for any new demands that may be needed for defense.

Republican floor leader Wherry of Nebraska has supported a 10 per cent over-all cut in appropriations for non-military purposes which is being pushed by 35 economy-minded Senators.

Natural Resources Cuts Defeated

The appropriation bill includes \$294.7 million for reclamation construction work. On July 19 Senator Douglas (D., Ill.) sponsored an

amendment to cut this amount by \$90.7 million arguing that adoption would show the nation that Congress was aware of the expense problems imposed by the war. Senator Hayden (D., Ariz.) said that the amount in the bill was \$31.2 million less than the President's request and \$2.7 million less than the funds approved by the House. He also asserted that the amendment would mean the curtailment of many projects which would produce hydroelectricity needed for the war effort. By voice vote the Senate rejected the Douglas amendment.

Senators Bridges (R., N. H.), Saltonstall (R., Mass.), and Ferguson (R., Mich.) on July 27 proposed a cut of \$365.7 million from the rivers, harbors and flood control projects appropriations. Senators Douglas and Lehman (D., N. Y.) joined the economy move calling the projects non-essential. The amendment was defeated by a vote of 47 to 28 with Senator Wherry joining the majority saying that the only practical reduction of non-military items in the appropriation bill was on an across-the-board basis.

President Truman has approved a temporary spending authorization to tide Federal departments and agencies over until August 31 or enactment of the General Appropriations bill. Senate action on the bill was expected to be completed by the end of the first week in August.

Status of Major Bills in Congress:

The status of major bills in Congress as of August 2:

The Senate and House have passed bills authorizing the one-year extension of enlistments and removing the ceiling on military manpower.

The House Banking Committee has approved installment buying curbs and materials priority, allocation and inventory controls.

President's request for \$10.5 billion boost in military funds being considered by a House Appropriations subcommittee.

Senate action on St. Lawrence Seaway not in sight. Social Security bill awaiting final Senate and House approval. House-passed bill giving \$32 million federal aid to education awaits Senate action. House Labor Committee has approved \$13 million in additional school-building funds for areas crowded by federal projects.

Senate action awaited on bill passed by House guaranteeing foreign investments under Point Four program. House Rules Committee has cleared a bill giving the larger share of ocean oil resources to the states.

Senate Finance Committee working on \$5 billion tax increase requested by Administration.

Major bills passed so far:

Authorization of 70 group Air Force; \$1.2 billion arms aid; \$2 billion price support boost; rent control extension; military construction bill authorizing \$600 million; oleo tax repealed; 19 reorganization plans; \$3.2 billion foreign economic aid authorization; bill to curb potato surpluses and expand cotton and peanut plantings.

Major bills passed but vetoed:

Kerr bill to exempt independent natural gas producers from federal regulation; basing point bill.

Airport Extension Pending

» A FIVE-YEAR extension of time for appropriating and expending funds to effect the Federal Airport Act of 1946 has been favorably reported out of the House Interstate and Foreign Commerce Committee. The date set is June 30, 1958.

The bill, S. 2875, was passed by the Senate several weeks ago and House action on the measure was expected early in August. In his testimony before both House and Senate committees, B. L. Knowles, of the national staff of The Associated General Contractors of America, urged extension of the act to provide added time for planning which would result in greater construction economies. (May CONSTRUCTOR, page 28.)

Projects Called Essential

The authorized appropriation of \$520 million remains unchanged. Originally, this federal expenditure was to be used at a rate of not more than \$100 million yearly for seven years. To date, the average appropriation per year has been less than \$40 million. Without the time extension, the act would expire with less than half of the program completed.

Speculation as to the effect of President Truman's message of July 21, in which he requested curtailment of all federal-aid construction programs not in the direct interest of national defense or essential civilian requirements, may be guided by statements in the committee's report:

"The Federal airport program has become a vital part of our national economy. . . . [It] permits the construction and development of all types of airports with public agencies and the Federal Government as sponsors. The development of these types of airports with Federal aid is in line with our national policy of developing highways, waterways and other utilities.

"The need for safe, efficient, and modern airport facilities is increasing from year to year at a rate of speed greater than is being presently satisfied. This is due to rapid increase in air traffic, changes in aircraft design, new thinking in the plans and handling of aircraft passengers in and around the terminal buildings, etc. . . .

"If such a vital act for national defense would be terminated, it would leave not only an uncompleted overall airport program, but a large number of partially completed airports."

Senate Committee Reports Highway Bill

• \$733 Million Federal Aid Measure Larger Than House

» THE FEDERAL-AID highway bill (H.R. 7941), which was passed by the House on May 19, has been reported out by the Senate Committee on Public Works. The Committee's recommendations follow closely those made by the Senate subcommittee on roads, which authorized an appropriation of \$550 million annually for the regular federal-aid systems, a special fund of \$70 million annually for the interstate network, and financing work in national forests, Indian reservations and similar areas. A detailed breakdown of the Senate's subcommittee recommendations appeared in the July issue of THE CONSTRUCTOR.

The principal changes by the full Senate committee over the subcommittee's report are:

(1) Authorizes increased appropriation for access roads to military establishments from \$10 million to \$25 million;

(2) Language inserted in the bill calling for use of the contract system on any U.S.-financed work of the

Inter-American Highway in Central America; and

(3) Makes provision that in the event of a national emergency, any unexpended federal funds may be utilized for all of the cost of road projects certified as essential to national defense, and authorizes to be appropriated any sums necessary to reimburse the funds so expended.

The bill covers the period of the fiscal year ending June 30, 1952 and the fiscal year ending June 30, 1953.

Federal and state participation would be upon the customary 50-50 basis on the regular federal-aid systems. In the special authorization of \$70 million for the interstate network the ratio would be 75-25, with the government bearing the major portion.

The House approved federal-aid bill called for a total of \$646.5 million. The Senate bill's items total approximately \$733 million. The bill previously introduced by Senator Chavez, chairman of the Senate committee, asked for \$970 million.

Three More Reorganization Plans in Effect

• Two Rejected, Hoover Group Claims Big Federal Savings

» SAVINGS resulting from the enactment of 35 per cent of the Hoover recommendations were estimated to be \$1,250 million annually by Dr. Robert L. Johnson, National Chairman of the Citizens Committee for the Hoover Report.

In a letter to lawmakers of both parties, he urged immediate action on measures concerning intelligence operations, civilian defense, a united medical administration, the post office, civil service, and federal accounting. "If before the Korean crisis there was one good reason for supporting the Hoover Commission's report, there are 10 today," Dr. Johnson said. "This is a time to take stock and tighten belts. We need, as never before, a well-organized, smoothly operating, muscular government. Reorganization can save both dollars and lives."

The disposition of the first 21 reorganization plans was reported in last month's issue of THE CONSTRUCTOR. Since then, three more plans have taken effect, and two have been

rejected. More are being considered.

Reorganization Plan No. 22 transfers the Federal National Mortgage Association from the Reconstruction Finance Corporation to the Housing and Home Finance Agency. Plan No. 23 transfers the prefabricated housing functions of the RFC to HHFA. These two plans which became effective July 9, substantially conform with the Hoover Report.

Plan No. 25, which became effective July 8, clarifies the duties and responsibilities of the chairman of the National Security Resources Board by vesting in him all the duties of the Board. This plan also conforms to the report.

Plan No. 24, which would have transferred the RFC to the Commerce Department, and Plan No. 27, which would have created a cabinet-rank Department of Health, Education and Security, were rejected. Neither plan conformed to the report. Plan No. 26, a revision of Plan No. 1 to reorganize the Treasury Department, is pending.



Top—External scaffolding at White House taken from south lawn. Exterior gives little indication of the extent of the renovation. *Harris & Ewing*

Above—Interior of the White House—now a shell with floors and partitions removed from garret to cellar. *Harris & Ewing*

Left—Paul Hauck (left), McShain general manager, inspects old brickwork in Blue Room wall. *Kent Photo*

» ONE OF THE most famous buildings in the world, the White House at 1600 Pennsylvania Avenue N. W. in Washington, D. C., is for the first time in its history undergoing a complete renovation. The project involves the renewal of the entire interior of the structure with modern fireproof materials and equipment of the same dimensions, proportions and appearance of the original building. Only the original walls and roof are retained, but they are supported on new foundations.

The executive mansion, home of every president of the United States except George Washington, has undergone many changes since it was first occupied by President and Mrs. John Adams in 1800. The series of alterations, additions and repairs have all taken toll of the structure's ability to support the imposed loads.

The White House being both an office and a dwelling saw doors, openings and chases cut through and into walls, floor joists bored, cut and altered to suit the requirements of succeeding presidents with little thought of the building's strength being impaired. The change over in heating systems from fireplaces and stoves to hot air and later to steam heat contributed to the weakening process.

Previous Alterations

The first alteration of major importance after the reconstruction of 1815 came in 1902 when the main floor was reconstructed and restored to something of its original architecture. A significant move in this project was the removal of the office function from the president's residence to temporary quarters in a new wing west of the west terrace where it remains to-day.

The second change occurred in 1927 when the roof was replaced by steel trusses, and a fire-resistive third floor was installed, the weight of this floor being suspended from the roof trusses. The way this alteration was carried out is one of the principal causes of the very radical rebuilding required to-day. When the alteration was completed, we had a White House with fire-resistive construction of the first and third stories and roof, and, except for a small amount of non-fireproofed structural steel introduced in 1902, a wooden second story dating back to the reconstruction following the fire of 1814.

In February 1948, President Truman asked a committee composed of R. E. Dougherty, president of the

Renovation of White House Proving Extensive Project

• Only Original Walls and Roof Retained

American Society of Civil Engineers; Douglas W. Orr, president of the American Institute of Architects; W. E. Reynolds, Commissioner of Public Buildings, Lorenzo A. Winslow, White House architect, and H. G. Crimm, chief White House usher, to investigate the structural condition of the White House. Conditions found by this committee were such that it was considered necessary to evacuate the building and undertake remedial measures on a large scale.

Early in 1949, Public Law 40 was passed by Congress creating a commission to be known officially as "The Commission on the Renovation of the Executive Mansion." It is composed of Senator Kenneth McKellar, (Democrat, Tennessee) chairman, Douglas W. Orr, vice-chairman, Senator Edward Martin (Republican, Pennsylvania), Representative Louis C. Rabaut (Democrat, Michigan), Representative Frank B. Keefe (Republican, Wisconsin) and Richard E. Dougherty. Messrs. Orr and Dougherty were members of the committee that recommended the extensive remodeling. Major General Glen W. Edgerton, of the Corps of Engineers, is executive director of the commission.

In the contractual setup, the commission functions in the role of owner with the Public Buildings Service as the architect. However, plans come from a dual source—PBS furnishing the mechanical and structural drawings and the White House architect, L. A. Winslow, the architectural. The PBS, however, acts as contracting agent for the government.

John McShain, Inc., A.G.C., of Philadelphia, Pennsylvania, is the general contractor. Paul Hauck, general manager for all McShain projects, is the contractor's manager on this project. William Kelley is project manager on the site for Public Buildings. Among the McShain projects in this area are the Du Pont Circle underpass (July Constructor, Page 53), General Accounting Office, Editors Building, the new *Washington Post* building, the Mellon Memorial fountain, and the National Institute of Health.

The McShain general contract is that of cost-plus-a-fee. General con-

tractors were asked to bid on a specified list of services usually supplied by a general contractor rather than on the estimated cost of doing the job. In competition with 15 other concerns, the Philadelphia firm was low bidder at \$100,000. Work was begun in November of 1949, and completion is scheduled for November 1951.

Two subcontracts have already been awarded. Spencer, White and Prentiss, A.G.C., New York, are doing the excavating and underpinning, and McCormick Construction Company, Wilmington, Delaware, the steel erecting. Steel was fabricated by the Bethlehem Steel Company and was delivered in record time.

Handling of Subcontracts

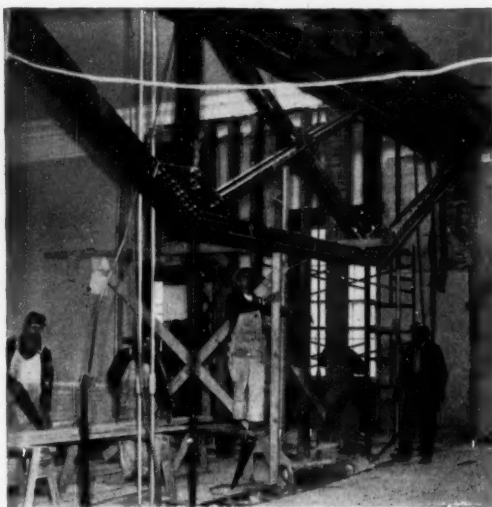
Other subcontracts to be let soon are electrical, plumbing, heating, air-conditioning, lathing, plastering, flooring, roofing, millwork, marble and miscellaneous trim items. A list of proposed bidders is submitted by the general contractor to the PBS for approval or necessary changes. This list is then channelled to the commission for similar action. The list of subcontractors returns to the general contractor through the same channels. The McShain company then requests bids at a time agreed upon by Public Buildings and McShain.

Messrs. Ernest E. Howard of New York and Kansas City, Missouri, and Emil H. Praeger, Long Island City, New York, are acting as engineering consultants for the commission. These men, while members of large engineering firms, are operating in this capacity as individuals. William Adams Delano of the firm of Delano & Aldrich, New York, is architectural consultant.

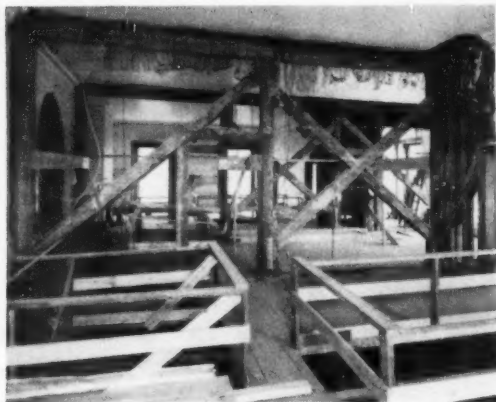
In the past nine months, the number of workmen on the job has varied between 50 and 250. This includes employees of the two subcontractors.

"With several other projects under way in Washington, we are in a position to shift our people around as we need them," said Paul Hauck.

Congress has appropriated the sum of \$5,400,000 to cover the complete job of renovation. This will include plans, supervision and other items outside the actual construction costs.



Rent Photos



Top—Removing old notched wooden trusses dating back to 1815.

Upper left—Beginning the demolition of the East Room. All wall ornamentation will be reproduced exactly in all interiors throughout the White House.

Lower left—Old wooden beams and bracing dating back to 1815.

Above—Truss supporting third floor and second floor and hangers—over the State Dining Room. Dates back to 1902.

Engineering Problems Posed in Dome Repairs

• Progress on Quake-Damaged Washington State Capitol

When the most severe earthquake ever to strike the Pacific Northwest rocked that area April 18, 1949, it caused several million dollars worth of damage, particularly to public buildings. One of the main casualties was the famous Washington State legislative Capitol building at Olympia, a marvel of modern masonry and Roman architecture, with a 287-foot high stone dome.

Patterned somewhat after the National Capitol at Washington, D. C., the massive dome sits upon four piers 80 feet high and 19 square, which are an integral part of the main legislative building. The piers rest upon concrete matting at the base.

The dome itself is topped with a 47-foot high stone lantern made up of 150 pieces of Wilkenson sandstone totaling about 150 tons in weight, with stones of various sizes up to 3,000 lb. As originally built, the lantern was solid masonry without any steel support. When the earthquake struck, it loosened the masonry and put several large cracks in the dome proper, rendering the main legislative building dangerous for occupancy in case future quakes might topple the heavy dome upon the roof of the building.

Engineers were faced with unusual and perplexing problems as to how they might repair the ten-million-dollar structure and render it safe again for the many state officials, legislative and office workers using the building. It was decided that the 150-ton stone lantern would have to be lightened and then reinforced and rebuilt.

The General Construction Co.—A.G.C. and the W. H. Witt Co., structural engineers, both of Seattle, who got the job of reconstruction on a cost plus basis, solved the material transportation problem by building a steeply inclined cable tramway on wooden superstructure from the ground on the edge of the building to the top of the dome. A flat open-deck car pulled by a cable carries materials and workmen. A Skagit winch powered by a Ford V-8 motor operates the car.

A temporary pipe scaffold encircling the entire cupola was first erected as a safety catch-all. Then a specially designed steel framework was constructed atop the dome to support the

remodeled lantern. A hand-operated traveling crane with ginpole was employed atop the dome for removing and lifting the heavy stones and steel beams.

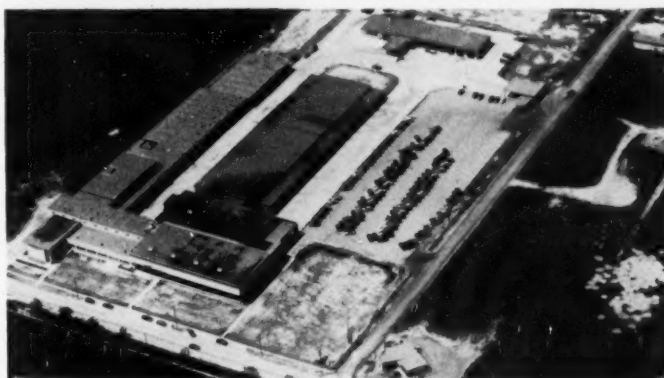
Each supporting pillar for the lantern was cut vertically three ways, the center hollowed out and a steel supporting rod inserted. Each pillar was then reassembled. A steel framework within the lantern will support the rest of the masonry but the original heavy top cap of solid stone was permanently removed.

A duplicate cap of a stainless metal alloy was used to replace the cap.

It is expected now that the new lantern will be completed in August or September of this year and neither tourists nor native Olympians will be able to distinguish any difference between the new and original lantern



that tops one of the most imposing state Capitol buildings in America.



Houston Has New Bottling Plant

Above—Aerial view of the new Coca-Cola Bottling Company plant just completed at Houston, Texas, showing main building, bottle storage building, storage garage, automotive maintenance building, gate house and

gate house shelter, drive through stock building and parking lot. Below—Main plant building. The Tellepsen Construction Company, A.G.C., Houston, was general contractor. Stone & Pitts, Beaumont, the architect.

State Auto Levies in 1949 Yielded \$2¼ Billion, A.P.I. Says

• Anticipated Funds Should Finance Big Program

» HIGHWAY USERS are now providing more revenue to the states through gasoline taxes and vehicle fees than the \$2,125,000,000 which was received in 1940 by the federal government from personal and corporate income and profits taxes, according to the American Petroleum Institute.

Phenomenal increases brought the annual yield from these state automotive levies to over \$2¼ billion in 1949 which compares with about \$1½ billion only three years earlier, and slightly less than that immediately before the war, in 1941, the A.P.I. said.

By far the largest portion of these funds comes from state gasoline taxes. Receipts from this source have shown substantial annual gains since the war, and reached a total of \$1,466,247,000 in 1949. Last year's level of collections, after refunds was 38 per cent

above 1946 and over 54 per cent higher than 1941.

The principal reason for these impressive gains is the increased productivity of existing state gasoline taxes. Just before the war, the states as a whole collected about \$238 million annually from each cent of their motor fuel taxes. By 1949 this yield had increased to over \$324 million. In short, aside from the increased revenues due to higher tax rates enacted during the period, each cent per gallon of the tax now brings in \$86 million a year more than in 1941.

As to the outlook for future receipts from state highway user taxes, there is every reason that the upward trend will continue. The U. S. Bureau of Mines recently revised upward to 5.9 per cent its earlier estimate of 4.5 per cent in 1950 motor fuel consump-

tion as compared with 1949. Greater returns from registration fees are also in prospect because of the growing number of vehicles in use.

It seems clear, continues the bulletin, that with proper expenditure, the funds that can be anticipated during the next few years from existing highway user taxes, as well as from federal aid and other sources, should finance a vast program of highway improvements throughout the nation.

N. Y. Thruway Described

New York's \$450 million cross-state superhighway now under construction naturally gives rise to many questions. To enlighten the public on the cost and financing procedure, ultramodern engineering features and its ultimate benefits to the people of the state, the New York State Thruway Authority is issuing a booklet which disposes of the most often asked questions. The initial press run was 100,000.

Interesting facts contained in the pamphlet include these points:

1. It will have no traffic lights, cross traffic, sharp curves, steep hills or sight restriction along its 535-mile route.
2. It will readily accommodate a load of 40,000 vehicles daily in each direction at any point.
3. In a band about 20 miles wide along the Thruway route are 85 per cent of the people of the state, 78 per cent of the passenger cars and 83 per cent of the trucks.
4. The Thruway, rather than impeding or delaying work on the regular highway system, actually will expedite it.

Road Test Report Out

Report No. 2 of Road Test 1—MD, being conducted by the Highway Research Board on U. S. Route 301 in Charles County, Maryland (See MAY CONSTRUCTOR) has just been published. It contains preliminary test results and reports of operations for May and June. The contents include raw data on roughometer determination, soil and concrete quality tests and deflection and stress information at various speeds and loads. This is the first operational data submitted thus far. Copies may be obtained by writing Highway Research Board, 2101 Constitution Avenue, Washington 25, D. C.



Fast Paving Job

Fast work in highway building is reported by the Koss Construction Company, A.G.C., of Des Moines, Iowa. On 22 miles of U. S. Route 81 in Kansas, Koss' crews poured 2,800 feet of 22-foot pavement in one 10-hour run. The slab was a uniform nine inches in thickness, mesh reinforced. Two fast batch pavers were

used. In another period of four consecutive days, these crews poured two full miles to complete the entire job of 285,000 square yards—a 22-mile paving project in just 12 calendar weeks. Equipment consisted of two Kochring 34-E Twinbatch pavers powered with 4-cylinder General Motors Diesel engines.

Bath House in Trailer in Caravan to Alaska

» CREWS of the C. F. Lytle Company, A.G.C., of Sioux City, Iowa, and the Green Construction Company, A.G.C., Des Moines, Iowa, engaged in building the International Express Airport at Anchorage, Alaska, enjoy unique bathing facilities provided by a trailer bath house. It is equipped with six separate showers, individual wash basins, mirrors, electric lights, hot and cold water faucets and other conveniences sufficient to accommodate 16 men.

Other vehicles in the caravan of 19 Fords which made the overland journey from Des Moines, Iowa, to Anchorage in 15 days, include a kitchen trailer and two machine shop trailers. When set up on the job, the machine shop trailers open upon an area which leads to a 32 x 32-foot canvas tent 14 feet high. One tent is for heavy equipment such as tractors and similar machinery. The other is for trucks and lighter equipment. Both have concrete floors.

The kitchen trailer has all modern cooking utensils and fixtures such as an oil-burning range, electric refrigerator, electric food mixer, sinks, work tables, shelves and storage cabinets. The trailer opens upon an areaway leading to a mess tent the size and construction of the shop tents. This tent has a concrete floor and fluorescent lighting and will accommodate 96 men seated at tables.

Other Fords in the cavalcade ranged from light duty F-1 pickups to extra heavy duty F-8 "Big Jobs" with 11.3 cubic yard dump box semi-trailer. These big trucks haul approximately 18 tons and average from 20 to 30 six-mile round trips per day. One of the big fellows is shown here delivering its load of gravel directly into the box of a tractor propelled spreader for placement on the graded earth of the runways.

The airport, which will strengthen Alaska's strategic position on top of the world's air routes, was authorized for construction by the Civil Aeronautics Administration at a cost of \$5 million, and was approved by a special act of Congress.

Other Alaskan contracts held by the Lytle and Green organizations include airports at Dillingham, Fort Yukon, Kotzebue, Iliamna, Tanana, Gulkana, Big Delta, Tanacross, Talkootna, Ga-



Above—After a fast three-mile trip from the gravel pit, capacity loads of crushed gravel are discharged from an F-8 Ford truck directly into the box of a tractor-propelled spreader for placement on the graded earth of runways on the International Express Airport at Anchorage, Alaska.

Below—Bath house in a trailer—unique accommodation for construction crew members engaged in building the new International Express Airport at Anchorage, Alaska. It has six separate showers, individual wash basins, mirrors, electric lights, hot and cold water faucets and other conveniences sufficient to accommodate 16 men.



lona, Kenai, Fairbanks, Bottles, Moses Point, Bethel and Annette Island, construction work on the Richardson Highway, Sponard road, 48 miles of

highway at Haines, Alaska, and access road to Anchorage, and a 28-mile Turnagain arm highway through the Chugach National Forest.

CHAMPION

WORKIN'EST

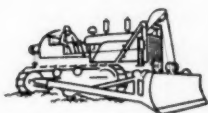
Here are some of the exclusive features that give the TD-24 its matchless work capacity:

1. 180-h.p. International diesel engine with gasoline-conversion starting and unmatched "lugability".
2. Synchromesh transmission for easy shift-on-the-go operation; plus eight speeds forward and eight reverse.
3. Planet Power drive, smooth and rugged, for instant speed change up or down one gear without declutching.
4. Planet Power steering to provide power on both tracks in gradual turns and permit feathered or pivot turns.
5. Separate reverse lever for quick change of direction of travel in any of the eight transmission speeds.
6. High-speed track assemblies with new recoil mechanism that holds front idlers in position against full-load track pull.

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TD-24

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DIESEL ENGINES • POWER UNITS

*Standardize
on Power
that Pays*



of Crawlers

TRACTOR ON ANY JOB

● "THE TD-24 is definitely outhauling every other tractor on the job. It will do so much work that we are sure our job costs will show a great saving!" That's the report of the foreman on the 247,000-yd. University of Maryland stadium project. ● "I don't have to stop on any grade," the operator reports, "and we have 25% or better on this job. Why, I just go up in 4th gear easy

while the other tractors have to switch to low to make it." And the TD-24 hauls a 17-yard scraper, heaped! ● Yes, the TD-24 is the "workin'est tractor" on any job. Yet, its operator is the worker with the easiest day! See your International Industrial Power Distributor. Get a TD-24 demonstration. Discover how you, too, can save job time, cut costs, earn extra profits.

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James Melton and
"Harvest of Stars,"
—NBC, Sunday
afternoons

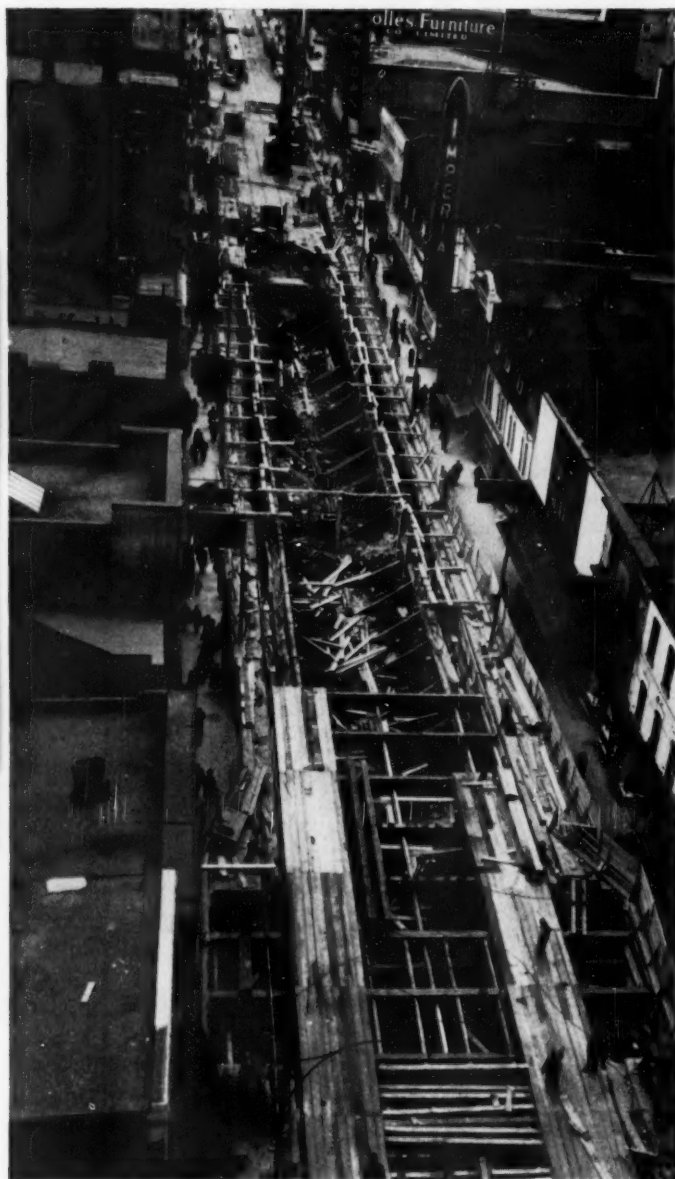


INTERNATIONAL INDUSTRIAL POWER



Unusual Construction Features on \$30 Million Toronto Subway

- Soldier Beams Support Temporary Street Decking



Brigdens Limited

» CANADA'S FIRST SUBWAY is being built under Yonge Street, the main traffic artery of the city of Toronto, to replace streetcar service. The subway starts on Front Street at the Union Station about 1,200 feet west of Yonge Street and extends north on Yonge Street 5,800 feet to College Street, northerly limit of the downtown area. The alignment then swings east about 150 feet and follows a private right-of-way to a terminal at Eglinton Avenue.

The cost of the subway was originally estimated at \$30 million, but this will be exceeded because of rising costs of labor and materials. On July 25 the board of Control authorized the sale in the United States of \$15 million of debentures to provide funds for this subway's construction. The issue provides for the repayment of interest and principal in United States funds which will realize \$1,465,000 additional by conversion to Canadian funds at the present rate of exchange. The interest rate will average 2.84 per cent.

Construction Details

Special attention is being paid to transfer arrangement at crosstown bus and streetcar lines, since 75 per cent of the subway passengers will transfer to or from surface vehicles. Because of this use there will be a number of attractive above ground stations. Subway station platforms will be 500 feet in length to accommodate trains of ten 48-foot cars.

For the subway structure a reinforced concrete box section was adopted. The typical section between stations has an over-all width of 32 feet, six inches, an over-all depth of 17 feet, eight inches, and an inside width of 13 feet, six inches for each track, with a clearance above the rail of 13 feet.

The open cut sections of the subway will have two to one slopes. The width at the bottom of the slope will be 44 feet and an over-all right-of-way width of 120 feet. To carry cross streets over the open cut a rigid-frame reinforced concrete bridge has been designed with a span of 48 feet and a minimum vertical clearance of 13 feet above top of the rail.

The track design calls for half ties set in concrete, with wooden ties and ballast in the open cut. Signals and speed controls will be automatic. Fans and louvers will control the ventilation with piston action of the trains forcing air in and out of the subway.

through vents. Fluorescent lighting will be employed.

The bracing of the sides of the cut and support of the temporary street surface or "decking" is by the soldier-beam method. It consists of driving a row of steel H-piles along the excavation line at either side to a depth of six to eight feet below subgrade and bracing across the top with steel I-beams. As the excavation progresses, horizontal wood sheeting is between the flanges of the H-piles, which are spaced at six-foot centers.

To support the street decking a continuous longitudinal steel-beam cap is placed on the top of each row of piles, and then transverse beams added at 12-foot centers, which causes the intermediate soldier piles to receive their bracing from the pile caps. The transverse beams are of sufficient strength that no piles are required in the excavation area, although a system of raker braces is used at some points. The decking, which is required to permit normal traffic at street level, consists generally of longitudinal 12 x 12-inch timbers with modifications where street car tracks must be supported.

Once the decking is in place, traffic on that section of the street is resumed and excavation carried out with shovels and trucks working beneath the decking.

The section of the subway shown under construction is being built by a joint venture of Arthur Johnson Corporation, Long Island City, New York; Johnson, Drake and Piper, A.G.C., New York; B. Perini & Sons, Inc., A.G.C., Framingham, Massachusetts, and C. A. Pitts, Toronto, Ontario. Charles B. Molineaux is general manager for the combination.

Work is scheduled for completion on Christmas Day, 1953.

Captain Westergaard Dies

Captain Harald M. Westergaard, CEC USNR, professor of civil engineering at Harvard and one time dean of the graduate school of engineering, died in Cambridge, Massachusetts, last month. His work on concrete slabs, published in 1925, is standard for all such construction today. He was a consultant to the Bureau of Reclamation, Bureau of Roads and the Army Engineers. He studied the effect of the A-bomb in Japan and was consulted on proposed engineering changes in the Panama Canal. He received many honors.

Chesapeake Bay Bridge Work Progresses

• Firms Amass Great Assembly of Floating Equipment

» PROBABLY THE largest assembly of floating construction equipment on the Atlantic coast is engaged in building a highway bridge across Chesapeake Bay at Sandy Point, Maryland, northeast of Annapolis.

The length of the bridge proper will be 4.3 miles, and, including the approaches, will be a total of six miles. A suspension bridge is being built in the main channel. The center span will be 1,600 feet long, and will provide a vertical clearance of 187.5 feet for a distance of 1,200 feet horizontally.

The remainder of the crossing includes continuous deck truss spans, one three span through cantilever unit and combinations of simple and continuous plate-girder spans. The Bethlehem Steel Company fabricated the complete superstructure. The finished structure will provide a roadway with a width of 28 feet from curb to curb, which is expected to permit two-way traffic on the bridge even if a vehicle should break down at some point.

Work is going rapidly forward on the foundations, which include the driving of 4,100 steel piles. The maximum water depth is 100 feet. Prime contractors each using several floating rigs on the job are Merritt-Chapman & Scott Corporation, A.G.C.; Booth and Flinn, A.G.C.; Frederick Snare Corporation; J. Rich Steers, Inc.; Baltimore Contractors Inc., A.G.C.; and The Construction Aggregates Corporation, A.G.C., New York. The superstructure work and most of the deck construction will be done by Bethlehem Steel Company. C. J. Langenfelder & Son Inc., A.G.C., Baltimore, Maryland, is doing the earth moving on the east approach. Nello I. Teer Company, A.G.C., Durham, North Carolina has the west approach grading.

J. C. Greiner Company, Baltimore, are the consulting engineers. Bruce Herman, Annapolis, Maryland, is the resident engineer.

The project is being financed by a \$43,900,000 bond issue. Completion is expected about the middle of 1952.



Thomas Mathis Bridge Dedicated

The new mile-long \$4.5 million Ocean County bridge across Barnegat Bay, New Jersey, was dedicated May 25, 1950. On the speakers' platform were (l. to r.) Vice Admiral C. E. Rosendahl, Alfred E. Driscoll, gover-

nor of New Jersey, Ole Hansen, A.G.C. contractor, Thomas A. Mathis, Ocean County treasurer at microphone, Highway Commissioner Spencer Miller, Jr. and State Highway Engineer Edward Kilpatrick.

Chief Joseph Dam Work in High Gear

• Structure to Be Second Largest Power Plant in World

» WITH THE COLUMBIA River's flood crest passed for another season, contractors for the Corps of Engineers' Chief Joseph Dam near Bridgeport, Washington, are swinging into high gear.

About 500 contractor employees were on the job early in July, with the figure being supplemented by employees of Peter Kiewit Sons Company, A.G.C., who are starting work on the north bank excavation for this second largest hydroelectric power producing plant in the world. The Kiewit organization has a contract amounting to \$2,572,544, involving more than 1¼ million cubic yards of excavation, construction of 2,000 lineal feet of cofferdam, unwatering the cofferdam, and about 2,000 lineal feet of rolled, impervious upstream blanket.

General Construction Company, A.G.C., Seattle, is moving 12,000 cubic yards of rock and earth per day on a six-day week on its \$2,265,000 contract for the intake channel to the powerhouse.

Strong and McDonald, Inc., A.G.C., Tacoma, is more than 62 per cent finished with the 10½-mile access highway from Brewster, Washington, to the dam site. This mode of access

was determined to be more economical than rail, and includes a \$300,000 bridge across the Okanogan River, and a \$1 million dollar bridge across the Columbia. Paving is scheduled to begin immediately by the D-H Paving Company, A.G.C., Vancouver.

Rather than build a construction town, the government is having such facilities handled through private enterprise. Permanent homes are being constructed in Bridgeport which will be sold to private individuals after completion of Chief Joseph Dam.

Tests are being made by the Puget Sound Bridge & Dredging Company, A.G.C., Seattle, to locate suitable sources for aggregate to be used in the 1,700,000 cubic yards of concrete to go into the structure.

The Kiewit contract is scheduled for completion in April 1951 to permit scheduling the award of a second contract for construction of a cofferdam inclosing the south half of the dam.

Initial installation in the powerhouse will be twenty 64,000 k.w. generating units, with provision for extending the powerhouse to include an ultimate 27 units producing 1,728,000 kilowatts. The powerhouse at its completion will be more than 2,000 feet long.

The dam is slated for completion and the first four generators placed on the line in 1956, with four more scheduled for placement each year thereafter until complete.

Total cost, estimated at \$221,000,000, is expected to be repaid to the government in less than 50 years from revenue derived from the sale of power.

Uriah Lott: Tale of a Man of Vision

East Texas in the closing decades of the nineteenth century and the first of the twentieth was badly in need of railroads and harbors. Uriah Lott, who came originally from Albany, New York, a clerk and salesman in Corpus Christi, saw this need and set about supplying it.

How he linked the cities and towns of Southeast Texas with rails, how he enabled Corpus Christi, Brownsville and Houston to become ports on the Gulf of Mexico, and how he opened up the rich Rio Grande Valley is an amazing story of American business ingenuity.

J. L. Allhands, A.G.C., of Dallas, Texas, has described the exploits of this remarkable man in his book, "Uriah Lott, Dauntless Pioneer and Man of Vision." The author is one of the original 97 founders of The Associated General Contractors of America.

Mr. Allhands, a highway and railroad contractor for half a century, is writing not only of a prominent Texan, but also about a good friend. In 1903, the author's firm received the contract from Lott for building the St. Louis, Brownsville and Mexico Railroad from Brownsville 142 miles to a point north of Corpus Christi. Through such contacts, the writer came to know and admire Uriah Lott.

Starting his career without money or influence, Uriah Lott demonstrated

what energy, confidence and an engaging personality can do. He was first of all a promoter, although he did many other things in his time. He was president of half a dozen railroads, a dealer in wool and hides, a dealer in real estate in towns through which his railroads ran, owner of a sheep ranch, owner of a fleet of sailing vessels, and one time head of a construction company organized to develop a deep water harbor.

Lott had his share of hard luck. He was often broke and some of his railroad ventures were financed and built a few miles at a time. On disposing of his first rail promotion, the Corpus Christi, San Diego and Rio Grande Narrow Gauge Railroad, to a New York syndicate, he bought a sheep ranch. The depression of '84, drought and the removal of tariff on wool sent him back to railroading.

But in spite of bad breaks, Lott seemed always able to secure financial backers. His San Antonio and Aransas Pass Railroad was started piecemeal out of San Antonio, but eventually reached the gulf and later spread to other points. Still his scores of enterprises failed to make him rich.

Mr. Allhands' interesting and well-documented book is a tribute to one of Texas' greatest pioneers who died in loneliness and poverty after contributing so much to the great state of his adoption.

Lessons of Hoover Dam

Invaluable engineering lessons learned the hard way in the construction of Hoover Dam on the Colorado River, the world's highest dam, have just been published in book form by the Bureau of Reclamation, of the Department of the Interior.

The 23 Bureau bulletins consolidate more than 10 years of research work by experts in the Office of the Chief Engineer at Denver. Their compilation was requested in 1932 by the Colorado River Board as a standard reference documentation.

Copies of the bulletins may be purchased from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., or the Bureau of Reclamation, Denver Federal Center, Denver, Colorado.

Cloth-bound sets of the bulletins cost \$44.85; sets bound in paper, \$29. Price of the individual bulletins range from \$.50 to \$3, as shown on lists furnished upon request.

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HAULING JOBS!**



Leading contractors and industrial users of heavy earth moving equipment have standardized on Euclids because they know from experience that "Eucls" increase profits and cut hauling costs. "Euclids sure do the job . . . actually cost less to own than any other hauling equipment," owners say.

Large capacity, dependable performance, and lower operating and maintenance costs have made Euclid the choice for off-the-highway hauling jobs. Designed for a wide range of work, there are models for handling all types of material efficiently . . . earth, coal, ore, rock, and other heavy excavation.

Rear-Dump Euclids range in capacity from 10 to 34 tons and are available with standard or quarry bodies . . . semi-rigid or spring mounted drive axles . . . diesel engines from 125 to 300 h.p. Bottom-Dump models have capacities of 13 to 50 cu. yds., 20 to 40 tons, with diesel engines to 275 h.p.

The parts and service facilities of Euclid's world-wide distributor organization assure prompt, efficient service to all Euclid owners. Write today for complete information on the Euclid line or call your distributor for an estimate on your present or future jobs.



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A.G.C. Publicizes Advantages Of Awarding Single Contracts

- New Booklet Made Available in Quantity
- Cites Merits of Centralized Job Responsibility

» AN ATTRACTIVE booklet setting forth the advantages of a single general contract over segregated contracts has just been prepared by The Associated General Contractors of America, and is now available in quantity.

Undivided Responsibility—Key to Lower Construction Costs was mailed to A.G.C. members with *National Newsletter* No. 15 dated July 21. After this initial distribution, several changes in the booklet's typography were indicated. This necessitated a slight delay in getting the document into the field. The 16-page booklet is a companion in format to *The Contract Method of Construction Safeguards Public Funds, Organization and Work of The Associated General Contractors of America, Inc.*, and the 1950 roster of officers, directors and committees.

Subject matter of the booklet is divided into three sections: "Advantages of One General Contract," "Bidding and Award of Specialty Contracts" and "Skill, Integrity and Responsibility."

The preface calls attention to the fact that the person, company or public agency that needs a building or other project is entitled to expect from the construction industry the best possible project constructed at the lowest possible cost.

Maximum efficiency in the construction of a project requiring interlocking operations is secured when undivided responsibility for its execution is placed upon an experienced and competent general contractor through the award of one general contract, the preface explains. Experiences of the industry have demonstrated that disappointments can be the result when other procedures are followed, no matter how attractive they may appear.

The purpose of the booklet is to outline the advantages to owners of awarding one general contract so that maximum value can be secured on the investment in construction.

Ten points are listed under the general heading, "Advantages of One General Contract," and each point is developed fully under its special caption.

1. **Undivided responsibility** leaves no uncertainty as to whom is responsible for everything on the job. The owner deals with only one organization or individual and saves administrative expenses. It allows the general contractor to exercise fully his function of creative management.

Membership in the A.G.C. "is assurance to the owner that the general contractor has demonstrated for a minimum of two years that he possessed the essential qualities of skill, integrity and responsibility."

The Bureau of Contract Information, Washington, D. C., furnishes information confidentially to owners on the particular qualifications of general contractors.

2. **Lowest Cost**, consistent with the quality desired, is assured when responsibility is centralized in the general contractor. Under one control, expensive delays are minimized and fees for management are avoided. In a lump sum contract, the general contractor assumes all risks and any added costs are absorbed by him. In a cost-plus-a-fixed-fee contract the general contractor has his reputation at stake to do the job economically.

3. **Completion on Schedule**. Placing undivided responsibility in the hands of a general contractor is the owner's assurance that the project will be completed promptly. To avoid penalties and secure final payment are the contractor's incentives to finish on time.

4. **Creative Management**. The most important function of the general contractor is management of the thousands of details which are part of a construction project. Part of the work is performed by the general contractor's own forces. Other parts are built by specialty contractors. Still other services are performed by other groups in the construction industry. Organizing and coordinating these agencies into a smoothly running team comes under this classification. Eleven functions of the general contractor are listed under this head.

5. **Quality Assured**. Under a single contract, the owner has greater

protection, for the general contractor knows that work not performed properly the first time is his expense. By being held responsible for all parts of the work, the general contractor is able to see that any changes in plans or specifications are carried out.

6. **Coordination for Maximum Efficiency**. Skillful coordination of all construction operations at maximum efficiency can only be achieved by unified control. Such coordination is absolutely necessary if the project, built to a specified quality at a predetermined price, is to be completed on schedule.

7. **Uniform Labor Policy**. Here the general contractor with his intimate knowledge of employment practices and control over the entire project can bring about harmonious working relations among all of the crafts employed on the work.

8. **Coordinated Safety Measures**. Safety measures for workmen, property and the public are vital, and for real efficiency accident prevention plans must be coordinated. If the general contractor does not have undivided responsibility, there is likelihood that a piecemeal safety program will be less effective.

9. **Protection from Suits**. The owner, by awarding one general contract, protects himself against losses from suits, claims, liens and other encumbrances. The general contractor by signing the contract assumes clearly defined legal and financial obligations for which he is responsible to the owner.

10. **Ethics of the Industry**. This section deals with the ethics of the industry and with standard contract forms and various customs and practices that have been found to be fair and equitable to all parties, and to be conducive to the most efficient construction operations.

The section, "Bidding and Award of Specialty Contracts" states in part: "An important part of the construction procedure is the bidding and award of specialty contracts for various specialized portions of the work. Specialty contractors perform essential and vital portions of the project."

The section then goes on to quote Section 3 of the A.G.C.'s Code of Ethical Conduct.

Something of the history of A.G.C. and its close association with societies and associations through joint committees are given in the section entitled, "Skill, Integrity and Responsibility."

4 questions every dump truck user should ask about new International 6-wheelers

QUESTION: "I hear new Internationals are heavy-duty engineered. What does that mean to me?"

ANSWER: "Heavy-duty engineered" means that extra stamina and durability are built into every one of the thousands of parts that go into new International 6-wheel Trucks. This gives you the long life and savings in operation and maintenance that have kept Internationals first in heavy-duty truck sales for 18 years.

QUESTION: "What other assurance do I have that new International 6-wheelers will do a good job on my particular job?"

ANSWER: From new valve-in-head engine to new bogie assembly, every new International 6-wheel Truck is *specialized* for years and years of outstanding 6-wheel truck performance. In addition, every model has been *proved* right from every standpoint in actual 6-wheeler operation.

QUESTION: "What do new Internationals offer in the way of new advancements?"

ANSWER: You get the new Comfo-Vision Cab—"roomiest cab on the road." You get the new third differential that eliminates the need for an extra propeller shaft and a power divider, thereby reducing truck weight. You get new Super-steering and new Super-maneuverability for easier handling and turns in the shortest practical circle. You get a new valve-in-head engine, new frame, new improvements from bumper to tail light.

QUESTION: "Where can I find out *more* about how new International 6-wheel Trucks will cut my hauling costs?"

ANSWER: Get in touch with your nearest International Truck Dealer or Branch. He'll gladly give you facts and figures on the right 6-wheel model for you.

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ALL NEW, ALL PROVED

INTERNATIONAL TRUCKS

INTERNATIONAL HARVESTER COMPANY CHICAGO



A.S.C.E. - A.G.C. Group Meets in Canada

• Approves Establishment of Regional Committee in California

» THE TWO-YEAR-OLD Joint Cooperative Committee of the American Society of Civil Engineers and The Associated General Contractors of America held a meeting in Toronto on July 13 in connection with the summer convention of the A.S.C.E. and the Engineering Institute of Canada.

Among the business transacted was approval of establishing a joint cooperative committee of the A.S.C.E.-A.G.C. at a regional level. This had been done by the two California sections of A.S.C.E. and the two A.G.C. chapters of that area. The benefits of additional joint committees of a regional character are being studied.

Standard Form Revisions

Progress was reported by the A.S.C.E. and A.G.C. task committees engaged in revising "Standard Contract for Engineering Construction." The A.G.C. subcommittee on private engineering contract forms has done considerable work in revision of that document. This subcommittee, which is expected to act jointly as the A.G.C. side of the task committee, announces a revised draft at an early date.

Consideration is being given review of the standard form, "Financial Statement for Bidders for Engineering Construction." It was suggested that while the A.G.C. side of the task committee was working on contracts, A.S.C.E. might review the financial statement.

The question of a fair penalty on small construction projects when the completion date was exceeded was a major subject discussed by the joint committee. It was concluded that beneficial results will be obtained if the contractor knows specifically what penalty will be levied.

Education Problems Discussed

A project of the joint committee is the improvement of engineering courses offered by engineering colleges and the improvement of programs of A.S.C.E. student chapters. A report from the civil service department of a leading university told of difficulty in recruiting students for civil engineering. How to assist in this matter will be the subject of study.

Employment of student engineers on construction projects during the summer received approbation. It was

suggested that the official publications of the two organizations point out editorially the benefits of this practice.

The joint committee recommended that where graduate engineers are employed in a responsible position on a construction project, this should count as experience toward an engineer's license.

The next session of the joint committee is scheduled for Houston, Texas, in February 1951. This is in connection with the Spring meeting of the A.S.C.E.

History of Apprenticeship

A brief history of apprenticeship in America, called "Apprenticeship Past and Present," has recently been published by the Department of Labor's Bureau of Apprenticeship. Copies are 15 cents each and may be purchased from the Government Printing Office in Washington.

The booklet tells briefly of the feudal mode of passing the skills from one generation to another, and sketches the impact of industrialization on the craft system. The curtailment of immigration following World War I brought on a concerted national effort by the construction industry for uniform apprentice training.

As a result of the Fitzgerald Act of 1937, the Bureau of Apprenticeship was established as the national administrative agency to carry out the law's objectives. By 1949, over 6,630 local joint apprenticeship committees had been established, plus 15 national trade committees representing national employer and labor groups.

Annual Apprentice Training Award Set Up

• Secretaries and Managers to Compete for \$100 Prize Money

» THE EXECUTIVE Committee of The Associated General Contractors of America last month approved the establishment of an Apprentice Training Activity Award, open to all chapter secretaries and managers. The \$100 award will be made annually by a special committee guided by the following criteria:

Bases for Award

The amount of time devoted to apprentice training during chapter meetings and the measure for which the competitor was responsible; competitor's participation in the chapter's Apprenticeship Committee; in apprentice graduation exercises; and in regional conferences, along with his speeches on apprentice training. Space given to apprentice training in the chapter bulletin and in the local papers as a result of the contestant's efforts; specific results of the local

program, such as the number of apprentices indentured, dropped and graduated during the contest period.

Rules Sent Chapters

Contestants should also list trades for which the chapter or branch has established training programs, indicate whether or not these programs are state-wide or cover only particular cities, and submit an estimate of the number of journeymen in each trade who are available for employment.

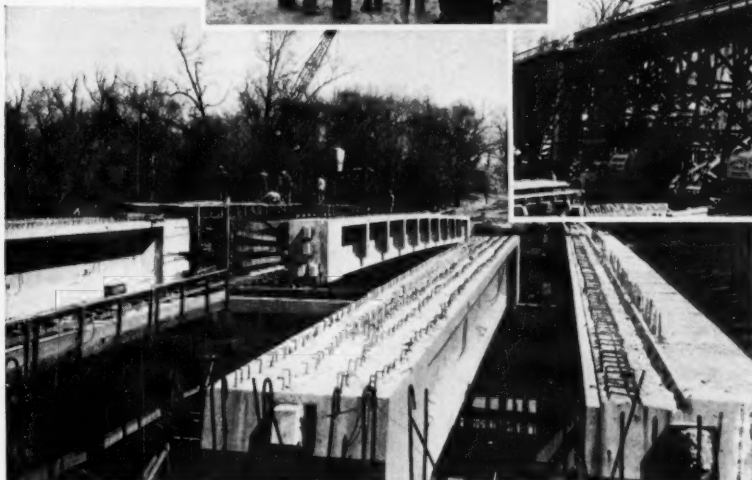
They should submit a detailed description of the over-all extent of the chapter or branch activities as well as a list of members active in the apprentice training program. Rules and regulations governing the contest have been sent to all chapter and branch secretaries, managers, presidents and members of the A.G.C. Labor and Apprenticeship Committees.

Employer Pays Twice

Ignorance of his state Workmen's Compensation laws cost an Illinois contractor several thousand dollars. One of his workmen, injured in a fall, agreed to take \$2,000 in settlement of all damages and signed a release to this effect.

Later the employee entered a claim for \$3,000 with the state commission and was awarded the full amount on the basis that settlements between employer and employee are invalid unless approved by the Industrial Commission. Illinois Supreme Court upheld the ruling that the contractor received no credit for the prior payment.

A few of the 500 engineers and invited guests who witnessed load being applied to test girder which withstood almost 12 times the designed working load of 750 pounds per lineal foot.



DIMENSIONS OF CENTER GIRDERS: Length, 160 ft. Depth 6 ft. 7 in. Width, top flange, 51 in.; bottom flange, 30 in.; web, 7 in.

WALNUT LANE BRIDGE

BUILT BY City of Philadelphia, Pa., under supervision of Samuel S. Baxter, Assistant Chief Engineer, Bureau of Engineering, Surveys and Zoning. **GENERAL CONTRACTOR:** Henry W. Horst Company, Philadelphia. **DESIGNER & CONTRACTOR** for prestressed girders: The Preload Corporation, New York, N.Y. **READY MIXED CONCRETE:** Warner Company, Philadelphia.

Prestressed concrete proves its vast possibilities

Because of its unique properties, prestressed concrete offers to architects and engineers new construction opportunities that are almost without limit.

Among its many advantages are these: It requires less material, yet is stronger and more elastic. Internal stresses can be so accurately computed that the high qualities of modern materials can be more fully utilized than ever before. Thus it becomes practical to design structural members of lighter weights and longer, straighter spans and to build bridges and buildings of more graceful appearance. And prestressed concrete

opens new opportunities in the field of prefabrication under close shop control.

Because prestressed concrete requires less material than conventional designs, substantial savings can often be made. For instance, the City of Philadelphia estimates savings of about \$300,000 on the new Walnut Lane Bridge—the first bridge constructed of prestressed concrete in America.

All the materials to be used in this bridge had to possess known characteristics, be uniform, pass rigid tests. Specifications required that the concrete reach a compressive

strength of 5400 psi. before prestressing. With 8½ bags of Lehigh Cement per cubic yard and a 2-inch slump, the concrete in the test girder reached a strength of 5800 psi. in 14 days.

Whatever your cement needs, there are Lehigh Cements to meet them. Our Service Department will be glad to help you with your specific problems.



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LEHIGH PORTLAND CEMENT • LEHIGH EARLY STRENGTH CEMENT • LEHIGH AIR-ENTRAINING CEMENT • LEHIGH MORTAR CEMENT

Modular Coordination System Continues to Attract Interest

• Structural Clay Products Institute Makes Survey

» CONTINUED and increasing interest in design and construction of buildings via the modular coordination system has been indicated recently by architects and government agencies in the building business.

The modular movement, which bases construction on proper dimensioning of all materials to a four-inch "module," has been with us a long time, but promotion of the system has been intensified during the past 15 years. The American Institute of Architects recently made a most decisive step toward wide adoption of the principle when it set up a staff position within the national organization to promote it.

Prior to the A.I.A.'s action, the Housing and Home Finance Agency last year was required to spend funds for modular research. This provision was written into the 1949 Housing Act, and a substantial portion of the \$250,000 in research funds made available to the agency has been directed into modular studies.

Brick Makers Favor System

But HHFA is not the only government agency which has felt the impact of the modular movement. A survey of federal bureaus in the construction business was recently undertaken by the Structural Clay Products Institute, nation-wide association of brick and tile manufacturers. The brick industry is in the process of converting to modular-sized materials. Its manufacturers, therefore, are sensitive to potential government markets for their products, as these agencies will allocate funds in excess of half a billion dollars for new public projects.

Here is a rundown of the Institute's findings among the various government agencies which have a hand in construction:

Housing and Home Finance Agency . . . All design handled at local-regional level. National office promotes studies aimed at proving economy claims of modular system.

U. S. Army Engineers . . . Employs architects; contracts for all construction work through private contractors. Agency encourages use of modular coordination method wherever possible. This policy has been in effect since

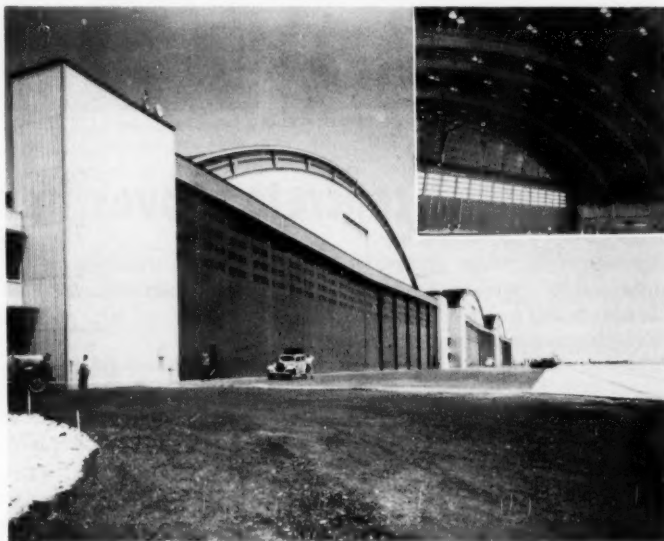
1948. Until recently, Army was responsible for design of a large part of Veteran's Administration hospitals, and several of these were modular-designed by private architects.

Public Buildings Service . . . Engages local architects and contractors for construction of public buildings such as post offices, customs houses, etc. Has no modular policy but regularly utilizes local materials and local contractors. Makes no objection to modular-planned construction. Safe to say modular materials and methods are used wherever available locally.

U. S. Navy, Bureau of Yards and Docks . . . Has no modular policy. Hires local architects and contractors, uses local building materials wherever possible, does not frown on modular system.

Veterans Administration . . . Designs hospitals and other veteran facilities from central architectural office in Washington. Hires private contractors. Frowns on use of modular system due to "lack of nation-wide availability of modular materials." Recently made concession for Oklahoma City veterans' hospital where only modular masonry material was available. However, subsequently reiterated opposition to use of modular system pending nation-wide distribution of modular products.

(The modular system was explained in a series of *CONSTRUCTOR* articles in July, August and September 1947.)



Modular coordination was employed to a modified extent in Hangars 3, 4 and 5 of the New York International Airport, designed for the Port of New York Authority by the Roberts and Schaefer Company, prime design engineers, and Lorimer and Rose, associated as architects.

The large 300-foot arch spans (see inset) presented some rather unusual dimensioning problems and were handled in a special manner specifically to meet the engineering requirements. The lean-to structures, however, which comprise some 107,000 square feet of floor space, were designed on a uniform major planning module of 16 feet with continuous strip windows of architectural projected sash having mullions four feet o.c., permitting subdivision of shop and office areas on a regular four-foot module.

Cavity wall construction was used for spandrels and comprised an outer wythe of 4" x 4" x 12" nominal gray buff brick. A two-inch cavity and an inner wythe of four-inch thick load bearing concrete block was used. The large modular brick, although covering twice as much wall area as standard brick, is pleasing in scale and the reduced number of joints lessen the possibility of rain infiltration.

New Foundation Method Used in Heavy Building

A NEW METHOD of constructing foundations for heavy buildings in congested areas which not only is less expensive than the caisson technique and minimizes hazards to workers, but also avoids damage to adjoining buildings, is being employed in the construction of the new 15-story Michigan Mutual Liability Company building in downtown Detroit. Barton-Malow Company, A.G.C., Detroit, is the general contractor.

"The problem was to find a method of compensating for the displacement of piles so that there would be no movement of clay which might result in damage to adjacent buildings," explained Arnold F. Malow. The previous practice had been to build Detroit's office buildings on caissons that went down to bedrock, he said.

Danger from Sulphur

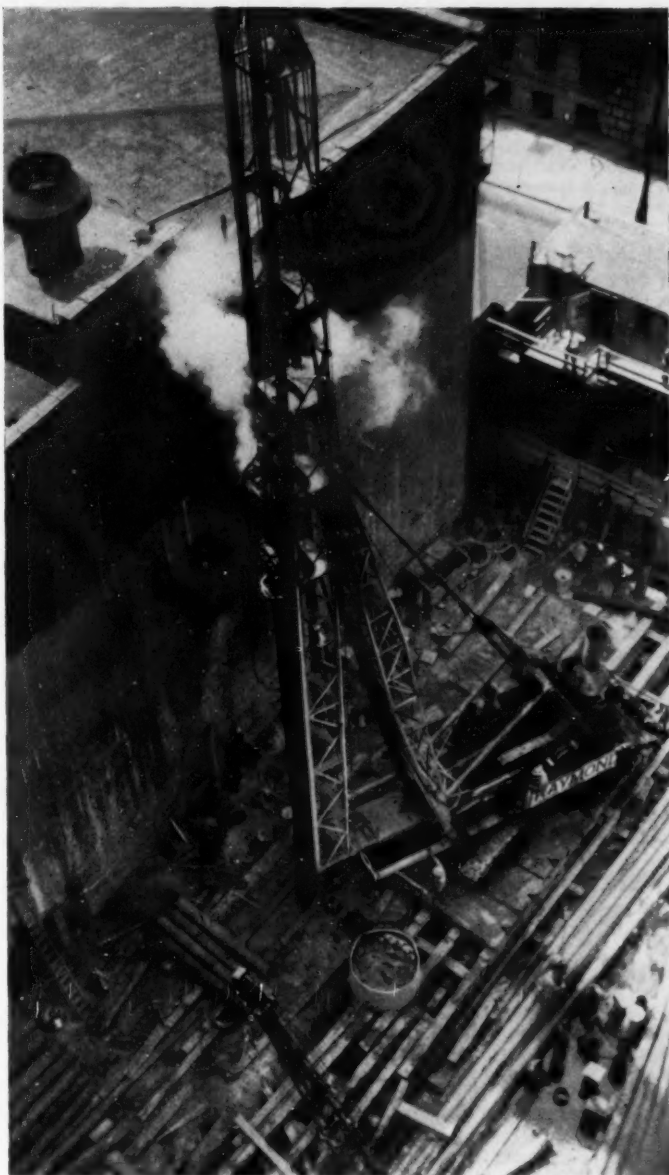
Limestone beneath Detroit has crevices and fissures which contain sulphur water at artesian head. When it has an avenue of escape, the sulphur water comes up substantially above river level. To control that water, air pressure was used in the caissons. Men were killed by the gas given off by the sulphur water.

To avoid this situation, the next development was to sink caissons to hard pan and spread bases out on top of the hard pan which in Detroit is about 10 feet thick on top of the bedrock and generally seals off the sulphur water. Although several large buildings had been erected on this type of foundation, the possibility of getting in trouble with the sulphur water still existed.

Digs 60-foot Post Hole

In the new method employed by Barton-Malow, a pipe, 14 inches in diameter, with an open end, is driven down for a depth of some 60 feet. A core of clay is retained in the pipe, which, when removed equals the volume displaced by the pile. The clay is ejected from the pipe by steam pressure. In this way, a balance is maintained and there is no movement of the plastic clay and no pressure by the clay against adjoining buildings.

When enough clay has been removed, a pile is driven into the hole and down to hard pan. The hole is 14 inches in diameter, and the pile, a



Detroit News Photo

steel pipe, is 10 $\frac{3}{4}$ inches in diameter. On top of this, more piling in sections varying from 10 $\frac{3}{4}$ inches at the bottom to 15 inches at the top are driven until the lower section reaches hard pan which is at a depth of 125 feet from the sidewalk level.

As the first 60-foot pipe is driven down, the clay forced up packs around the tapering top sections. The pipes are then filled with concrete. Approximately 400 such piles will support the new building.

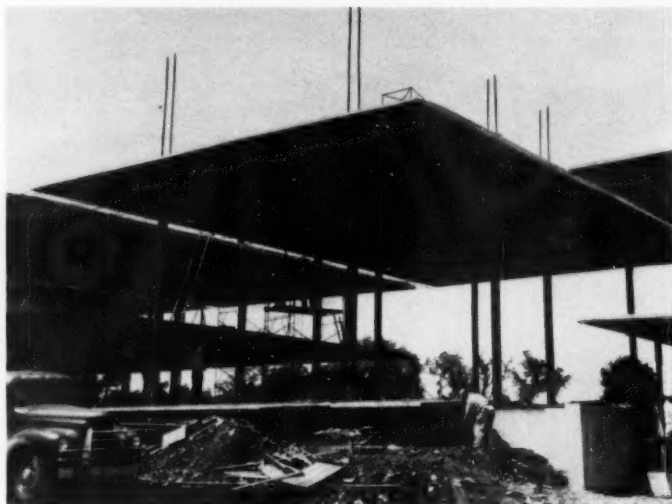
Roof-Raising Building Method Acclaimed

• Youtz-Slick System Called Successful on Commercial Job

» THE YOUTZ-SLICK Building Method was completely successful in its first commercial application on the two-story administration building for Trinity University in San Antonio, Texas, according to technicians who

used it. (Earlier story in February CONSTRUCTOR, page 40.)

Favorable comment came at an open forum held June 23, sponsored by the Texstar Corporation, a licensing agent for the method. The forum was at-



First commercial use of the Youtz-Slick Building Method on Trinity University, San Antonio, Texas. Contractors are James Stewart & Company, New York City, and G. W. Mitchell Company, San Antonio, both A.G.C. Roof and second floor are being put in place.

New Pouring Method to Save Month on Dams

• Single Placement of 1,400 Cubic Yards Around Scroll Case

» A NEW METHOD of pouring concrete around the scroll cases for hydroelectric turbines, which is expected to step up completion of each of the nine \$5,000 KW generating units at both the Center Hill and Wolf Creek projects is reported by the Nashville District, Corps of Engineers.

"This new method consists of embedding in one concrete pour, the entire 150-ton scroll case which delivers water to the turbine blades," the district engineer reports. "This pour, which is approximately 24 feet deep and contains 1,400 cubic yards of concrete, is usually made in 10 shallow pours with three to four-day intervals between pours.

"To accomplish this in one pour under the revised procedure, the top and bottom of the scroll case were sealed off by bulkhead plates and water from the reservoir was allowed to enter the penstock and scroll case and to build up the normal working pressure. This permitted visual inspection of the unit under pressure, prevented it from floating upward and greatly assisted in absorbing the concrete's heat of hydration. . . .

"Pours around the first two units have been highly successful."

The district said the advanced completion at the two projects will result in increased power revenues equal to one month's "free" additional operation of the powerhouses.

tended by 150 Texas construction men who assembled at the laboratories of the Institute of Inventive Research, a non-profit organization responsible for the development of the process.

Speaker Frank T. Drought, engineer on the university construction, stated that he had "never seen such a beautiful performance" and added that his firm was using the method on two more large construction projects to begin soon.

O'Neil Ford, one of the architects for the university and a consultant to the Institute on the new method, pointed out that once the roof of a building had been raised, working conditions on the job were safer and workers were protected from the weather.

Dr. Vagtborg, president of the Southwest Research Institute and director of the Institute of Inventive Research, said that much experience and development was needed to advance the new technique to its ultimate cost-cutting capabilities. He announced that the Institute was negotiating with several large firms which had applied for franchise agreements enabling them to license construction companies to use the method both at home and abroad.

B.R.A.B. Announces Program

The Building Research Advisory Board has announced the program of its one-day research correlation conference on "Fire Resistance of Exterior Non-Load-Bearing Walls" which will be held in the auditorium of the National Academy of Sciences, Washington, D. C., on September 26, 1950. This is the second such conference of the organization.

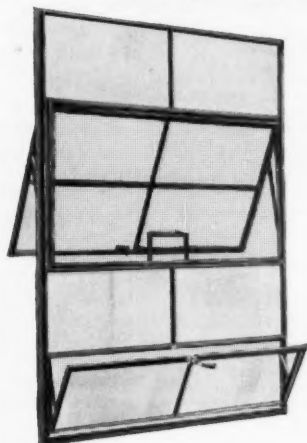
The conference will be opened at 9:45 a.m. by B.R.A.B. Chairman Carl Boester. Existing requirements affecting this type of wall, including a review of tests, criteria and codes, will occupy the half hour from 10:00 a.m. on. From 10:30 until 12 o'clock, the viewpoint of the architect, the viewpoint of the research engineer, and the viewpoint of the building contractor will be delivered, with half an hour for each presentation.

From 2:00 until 4:30 p.m., there will be a discussion of existing criteria and regulations, with one half hour devoted to the viewpoints of the underwriter, code official and public buildings engineer. The conference will close with a full hour of discussion.

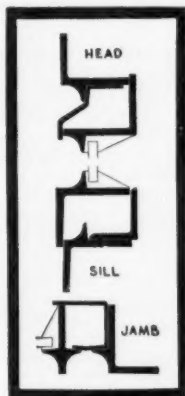
Tips on cutting window costs

If You Want Weathertight Windows

... look for this Window Feature



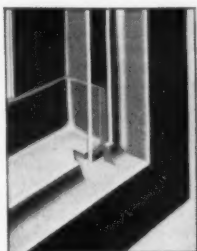
Fenestra Commercial Projected Window



FENESTRA TIGHT-WEATHERING SECTIONS

Right: Detail at vent corner, showing end return of sill weathering.

Left: Sections at head, sill and jambs, showing double contact and positive weathering.



See the double contact between vent and frame . . . all the way around. Fenestra* Commercial Projected Steel Windows are wind-tight . . . water-tight. Every detail of these fine windows is designed to keep out the weather.

And they are especially popular for efficient, economical screening or shading—vents don't interfere. You can have fresh-air ventilation, too . . . any time. The open-out vent forms a canopy over the opening. The open-in vent is a built-in windguard that also sheds rain outside.

With slender lines and extra glass area, all Fenestra Industrial Steel Windows bring in extra daylight . . . reduce accident-tempting shadows. They're good looking and rugged, warp-proof and firesafe. They can be easily combined vertically or horizontally to form whole walls of windows.

Fenestra Windows cost less in three important ways: *Low first cost:* Standardization of types and sizes permits efficient volume production. *Low installation cost:* Modular sizes provide co-ordination of windows with wall materials. *Low maintenance cost:* Precision fabrication of strong, high-quality materials.

For plants, offices, labs, warehouses, commercial buildings and many others, Fenestra Industrial Steel Windows are your best bet for high quality at remarkably low cost.

Mail the coupon for types and sizes. Or call your Fenestra Salesman (listed in your Yellow Telephone Directory) . . . Representative of America's oldest and largest Steel Window Manufacturer.

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1. Stronger, more efficient vent hanging—directly attached arms, trouble-free sliding shoe.
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3. Automatic assembly of ventilators—vents fit properly and operate easily.
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5. Strong, tight-weathering sections—continuous double contact all around vent opening.
6. Rigid, interlocking muntin joints—rugged construction for low maintenance.
7. Strong hardware attachment—prevents breakage, affords safer locking.

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Order No.	MANUALS	Per Copy	Per Dozen	Per 100
1.	A.G.C. Manual _____ (Contains documents listed below: Nos. 3-50, inclusive, and Nos. 54, 55, 56, 56A, 57, 58)	\$5.00	\$50.00	_____
2.	Accident Prevention Manual (Revised and enlarged 1949) _____	3.00	30.00	\$210.00

3. Standard Contract for Engineering Construction issued by the Joint Conference on Standard Construction Contracts.....	.25	2.75	20.00
4. Standard Building Contract of the American Institute of Architects—Revised 5th Edition50		47.50
5. Subcontract form—American Institute of Architects—Revised 5th Edition.....	.10		9.50
7. Standard Government Contract and Instructions to Bidders.....	.10	.50	4.00
8. A.G.C. Cost Plus a Fee Contract.....	.10	.50	2.50
9. A.I.A. Cost Plus a Fee Agreement between Contractor and Owner.....	.10		
11. Equipment Rental Agreement.....	.10	.50	3.00
12. A.G.C. Proposal Form.....	.10	.50	3.00

16.	Building Estimate Summary.....	.10	.50	3.00
17.	Job Overhead Summary.....	.10	.50	3.00
20.	Contractors' Equipment Ownership Expense (Itemized tables of ownership expense elements with instructions for application, Revised 1949).....	1.00	10.00	65.00
21.	Equipment Record—Bond paper.....	.10	.50	3.00
22.	Equipment Record—Cardboard.....	.10	.50	3.50

24.	Standard Pre-Qualification Questionnaires and Financial Statements for Prospective Bidders—Complete in Cover Engineering Construction (For Qualifying Before Bidding)_____	.20	1.80	12.00
25.	Standard Pre-Qualification Questionnaires and Financial Statements for Prospective Bidders—Complete in Cover Building Construction (For Qualifying Before Bidding) _____	.20	1.80	12.00

Order No.	INVESTIGATION OF BIDDERS (Continued)	Per Copy	Per Dozen	Per 100
26.	Standard Questionnaires and Financial Statement for Bidders—Complete in Cover. Engineering Construction (For Qualifying After Bidding) _____	.20	\$1.80	\$12.00
27.	Standard Questionnaires and Financial Statement for Bidders—Complete in Cover. Building Construction (For Qualifying After Bidding) _____	.20	1.80	12.00
28.	Financial Statement and Questionnaire for Credit Transactions _____	.20	1.80	12.00

29. Insurance Check List.....	.10	1.00	5.00
30. The Functions of a General Contractor.....	.10	.75	6.00
34. A.G.C. Governing Provisions.....	.10	.50	3.00
35. A.G.C. Code of Ethical Conduct.....	.10	.50	3.00
36. Concrete Mixer Standards.....			Single copies — no
36a. Contractors' Pump Standards.....			charge; quantity
37. A.I.A. Standard Form of Arbitration Procedure.....			prices on application.
38. Suggested Guide to Bidding Procedure.....			



List of Styles and Prices on request.

40. A.G.C. Metal Seal (red and black) 10" dia.	.40
41. A.G.C. Decalcomania Seal (red and black)	
a. 10" dia. _____	.20
b. 5" dia. _____	.10

Metal Seals and Decals: 20% discount for orders of more than 50; 40% discount for orders of 200 or more.

Form SS1: Application for Employment;
Form SS2: Employees' History Record;
Form SS3: Employees' Employment and
Earnings; Form SS4: Payroll. List of
prices and styles will be furnished to
A.G.C. members on request.

[illegible]

August 1950

» THE TREND toward separate contracts and problems in labor relations were the principal topics discussed recently at the Western Chapters Conference of the Associated General Contractors of America held in Reno, Nevada.

The 28 conferees considered at length the growing acceptance by state legislatures of the separate contract method of construction. They finally determined that all chapters must keep each other informed of developments and that each chapter should oppose the trend. A resolution to this effect was then drawn up.

A representative from each of the 10 chapters attending the meeting

Western Chapters Conference Acts on Separate Contracts

• Also Protests Equipment Rentals by Outsiders

gave a brief résumé of his chapter's labor agreements, describing wage policies, termination dates and current union demands. Chapters having long-term agreements claimed that much stability and efficiency was gained by the contractors' being able to plan work well in advance.

Labor Agreements Discussed

James D. Marshall, assistant managing director of the national association, said that the national office makes every effort to keep the chapters informed on pertinent labor developments as they occur instead of issuing bulletins at fixed intervals.

In discussing national trends of labor agreements, Mr. Marshall stated that there had been wage reductions in some sections of the country. He also pointed out that the practice of some negotiating bodies of settling wage rates for classifications not employed by participating members was most undesirable, because these rates were used later as bargaining levers on the unrepresented employers who hire that particular classification of

worker. He advised all chapters to resist this practice whenever possible.

A resolution was adopted protesting the purchase of construction equipment by groups outside the industry for rental purposes. The conferees felt that the contractors themselves maintained an adequate pool of equipment to supply the industry.

Conference to Continue

After unanimously deciding that the Western Chapters Conference was necessary for the purpose of coordinating labor matters in the western states, the members then fixed meeting dates on the first Monday in November and April of each year, subject to the discretion of the chairman.

Chapters represented at the meeting are as follows: Arizona and Nevada Chapters; Northern, Central, and Southern California Chapters; Portland, and Mountain Pacific Chapters; and the Idaho Branch and the Intermountain Branch. The national staff was represented by J. D. Marshall and A. N. Carter. H. L. Royden of Phoenix, Arizona, was chairman.

Lee T. Turner Dies

Lee T. Turner, 58, a member of the Master Builders Association, Inc., of the District of Columbia, A.G.C., died of a heart attack June 30.

Mr. Turner, a native of the District and a well-known local builder, had been a member of the District of Columbia Apprenticeship Council since its beginning in 1946.

He was a veteran of World War I and a member of the American Legion and the Disabled American Veterans. Also, he belonged to the Washington Board of Trade, the Washington Building Congress, the Masonic Federal Lodge No. 1, and the Columbia Chapter No. 1, Royal Arch Masons.

Mr. Turner is survived by his wife, Mrs. Ida S. Turner; a son, John Lee Turner, and his mother, Mrs. Annie C. Turner.

The burial services at Arlington Cemetery were well attended. C. S. Embrey, administrative assistant of the national A.G.C., represented the staff.

Paul Carney Dead

Paul S. Carney, president of the Carney Construction Company, died of a heart ailment June 24 at the age of 36.

Mr. Carney was a member of the Arizona Chapter, A.G.C. He was also owner of the Diamond Two Ranch at Wagner, Arizona, and in 1939 was named world champion cowboy by the Rodeo Association of America.

He is survived by his widow and three sons.

Northeast Louisiana Contractors Chartered

• McBride Installed as President of New Chapter

» THE NORTHEAST Louisiana Contractors Association of The Associated General Contractors of America was formally activated June 29, when W. Murray Werner, national director of District 4, presented the charter to the chapter's president, A. B. McBride.

Welton A. Snow, manager of the Building Contractors' Division of the national A.G.C. in Washington, D. C., made the principal address in which he outlined for members and guests the important functions of the national staff and the part the A.G.C. plays in national affairs.

Officers installed at the presentation ceremony are as follows: president, A. B. McBride, McBride & Son, Inc., Bastrop; vice president, Tommy Poulos, with the firm J. A. Harper, Crow-

ville; secretary-treasurer, G. O. Phillips, Ford, Bacon & Davis Construction Corporation, Monroe; and executive secretary, O. W. Brown, Monroe.

The 14 members are composed of building, highway and heavy contractors, all of whom are primarily builders. They are as follows:

Ford, Bacon & Davis Construction Corporation, Gilbert Bros., W. G. Haynes, Jesse F. Heard & Son, Humble and Humble, Frank Masling & Son, and W. C. Salley, all of Monroe; McBride & Son, Inc., and L. C. Spier of Bastrop; C. R. Adams, Winnsboro; R. G. Cruse Lumber Company, Inc., Sicily Island; Edward H. Eiland, Tallulah; Garland Construction Company, Ltd., Rayville; J. A. Harper, Crowley; and one local member, T. L. James & Company, Ruston, a highway and heavy contractor.

Southern California Show Draws Many

• A.G.C. Chapter's Display Furthers Association Principles

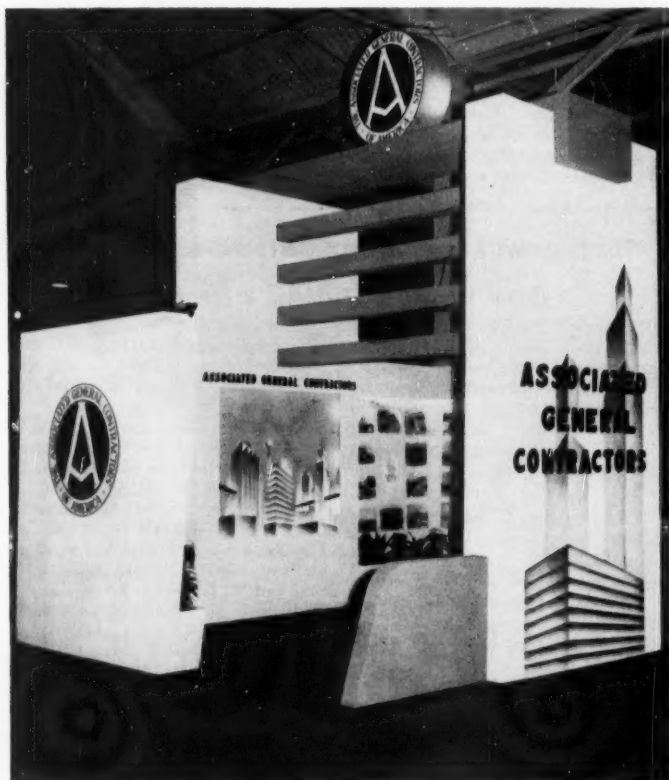
» YEARLY, the Southern California Chapter of The Associated Contractors of America is a sponsor of the Construction Industries Exposition and Home Show of Southern California. The show was held in the Pan Pacific Auditorium in Los Angeles June 10 to 18.

The chapter's booth, pictured below, was considerably smaller this year, but drew a large number of spectators who observed the fine collection of early Los Angeles memorabilia displayed within. On the back wall, not visible in the picture, was the A.G.C. Code of Ethical Conduct enlarged to a size of four feet by six. From the booth, over 750 copies of the booklet, *Organization and Work of the A.G.C.*, were distributed to the visiting public.

The largest show of its kind in the nation, its million-dollar attractions in-

cluded 250 new exhibits in 43 classifications plus a cast of entertainers featuring Spike Jones and his orchestra. New and unusual home building and furnishing materials were exhibited by the non-profit enterprise, owned and operated by the Los Angeles Chamber of Commerce and 13 trade associations. William Curlett, Curlett Construction Company, Long Beach, a director of District 2 and member of the Southern California Chapter, was first vice president and director of the Home Show.

Some of the feature displays were an exhibit of 20 modern homes, built, furnished and landscaped in miniature, called Dream Homes on Parade; large civic exhibits presented by the U. S. Army, Federal Housing Administration, Los Angeles schools and the University of Southern California.



Baltes Heads Ohio Contractors

A. J. "Jim" Baltes, long an active and well-known member of The A.G.C., has been elected president of the Ohio Contractors Association. He is president of the firm of A. J. Baltes, Inc., Norwalk, Ohio, which during the past 15 years has constructed more than \$15 million worth of work, including highways, airports, reservoirs and other heavy engineering projects.

In a recent issue of *Ohio Public Works* appears an interview of Mr. Baltes under the title, "Fifty Years of Contracting." "Jim" states that he merely followed in his father's footsteps. At the age of 15, in the summer of 1900, he won his spurs by completing a cement sidewalk which his father, a concrete and masonry contractor, left in his charge. "It was so smooth that it was too slippery to walk on in wet weather, and had to be bush-hammered to roughen it for easy walking," he explains.

In the interview, Mr. Baltes describes some of the inadequacies of paving methods and equipment half a century ago. He says he thought of himself as a paving contractor for a long time, but he is equally proud of his achievements in the heavy field.

Georgia Elects Justi

C. R. Justi, Griffin Construction Company, Atlanta, has been elected president of the Georgia Branch, Associated General Contractors of America. His term began July 1 and will run for a year.

Other new officers are: first vice president, Merrill W. Newbanks, Atlanta; second vice president, Clarence W. Mobley, Clarence Mobley Construction Company, Augusta; secretary, W. R. Rose, Rapid Transfer and Construction Company, Atlanta; treasurer, Alvin Barge, Barge-Thompson Company, Atlanta; and executive secretary, Hugh W. Roberts, Atlanta.

Retiring president Ray M. Lee, Ray M. Lee Company, Atlanta, stated that Georgia's large building program is being carried out principally by association members.

Mr. Justi said that during the next 12 months the building trades could expect "continued vigorous activity in all construction fields." Also, he announced that Graham Waitt, Atlanta, had been named assistant executive secretary.

MONOTUBE STEEL PILES save time, cut costs on "hard-to-get-to" job!

YOU'LL get new ideas about the savings and conveniences with Monotubes from the job pictured here.

It's a foundation for an overpass to carry coal cars from a strip mine. Naturally, it has to be strong and rigid—to withstand the multiple-ton weights of loaded coal cars. Construction was wanted quickly.

FAST "DRIVING" RECORD!

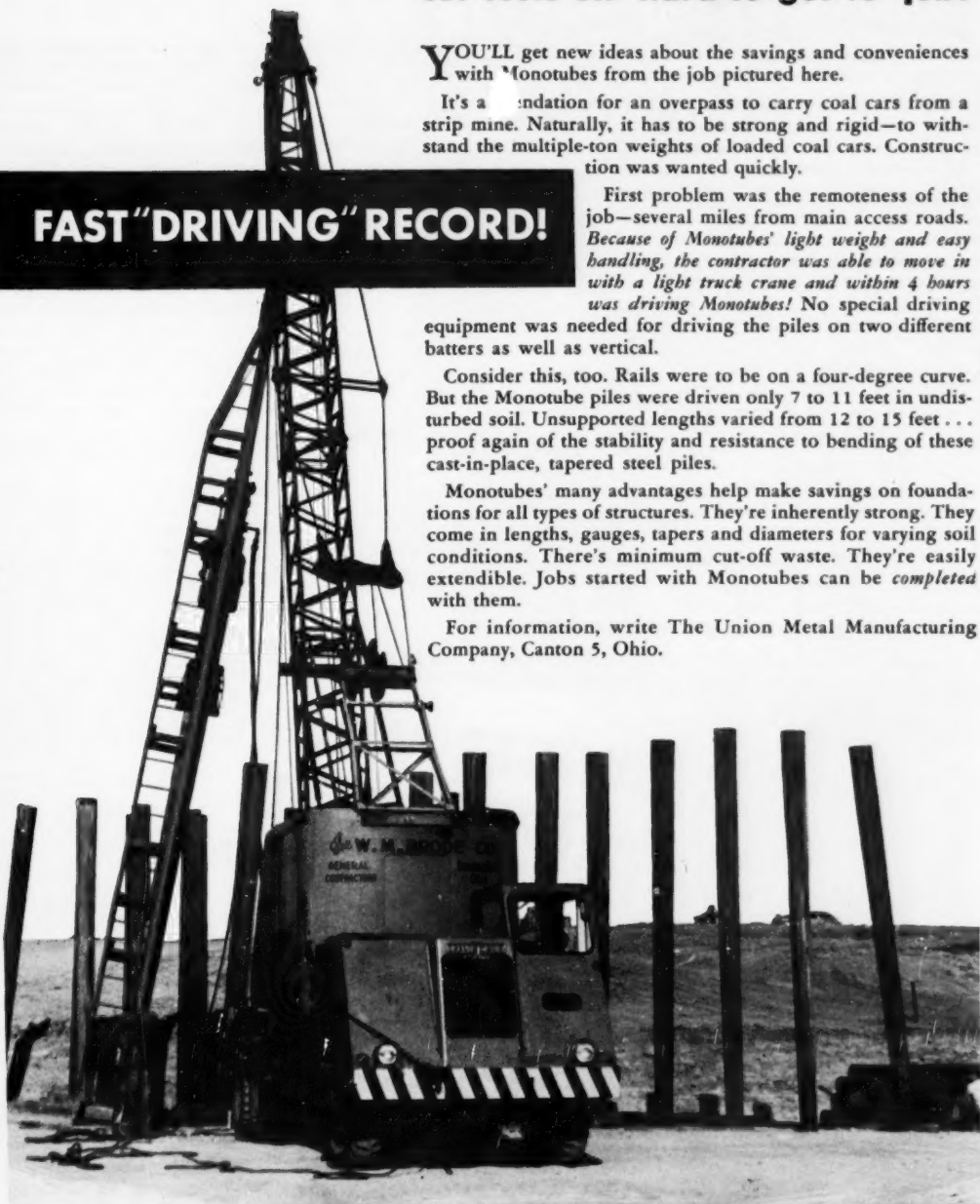
First problem was the remoteness of the job—several miles from main access roads. *Because of Monotubes' light weight and easy handling, the contractor was able to move in with a light truck crane and within 4 hours was driving Monotubes!* No special driving

equipment was needed for driving the piles on two different batters as well as vertical.

Consider this, too. Rails were to be on a four-degree curve. But the Monotube piles were driven only 7 to 11 feet in undisturbed soil. Unsupported lengths varied from 12 to 15 feet . . . proof again of the stability and resistance to bending of these cast-in-place, tapered steel piles.

Monotubes' many advantages help make savings on foundations for all types of structures. They're inherently strong. They come in lengths, gauges, tapers and diameters for varying soil conditions. There's minimum cut-off waste. They're easily extendible. Jobs started with Monotubes can be completed with them.

For information, write The Union Metal Manufacturing Company, Canton 5, Ohio.



Overpass construction at Cadiz, Ohio.
Contractor: The W. M. Brode Company,
Newcomerstown, Ohio.

UNION METAL

Monotube Foundation Piles

Joint Meeting

The North and South Carolina Chapters of the American Institute of Architects and the Carolinas Branch, A.G.C., held a joint meeting at the Ocean Forest Hotel, Myrtle Beach, South Carolina, July 10, 11 and 12.

New Secretaries

The Associated Contractors of New Mexico and the Colorado Building Chapter, A.G.C., have recently announced changes in their staffs.

Mr. L. W. Cantelou, who has been manager of the New Mexico Chapter for many years, resigned on July 1. Mr. C. O. Faulk, Santa Fe, has been chosen to fill the vacancy.

The Colorado Building Chapter has announced the resignation of Don S. McDougal, executive secretary. He has been replaced by Mr. William S. Hibberd who is the former labor relations manager for the Atkinson & Jones Company, A.G.C., which worked

on the Hanford Atomic Energy Project at Richland, Washington.

North Dakota Charter

The charter application of the Associated General Contractors of North Dakota was approved by the Executive Committee A.G.C., during its meeting at Mackinac Island, Michigan, July 5 and 6.

Joseph M. Powers, president of the chapter, has announced the appointment of a special membership committee to handle the increasing demands made on the officers and directors for information and publicity.

The appointees are E. A. Moline, John B. Jardine, Lloyd Kreig, Milton Rue, John Larson, Joseph R. Mackley, Lief Mattison, William Gilanders and A. M. Swingen.

At present, plans are being made for the first annual convention of the chapter to be held in September. H. E. Foreman, managing director of the A.G.C., Washington, D. C., is expected to be on hand to present the charter.

A. J. Rayner, field representative for the A.G.C., predicted that before the first regular organization meeting there would be approximately 50 active members and 75 associate members enrolled.

Model Subcontractor Praised

More than 30 general contractors of the Wilmington area, many of them members of the Associated General Contractors of Delaware, A.G.C., and the Allied Construction Industries of Delaware, joined in paying tribute to a "model subcontractor" on July 11.

In this novel manner, Arthur Pavoni, Wilmington, a subcontractor in marble, tile and terrazo, was praised for his reliability, skill and devotion to his work.

During the surprise dinner held at the DuPont Hotel, Mr. Pavoni was presented an engraved watch in recognition of his "faithful service."

Richard G. Krapf, president of the A.G.C. of Delaware, presided over the ceremonies.



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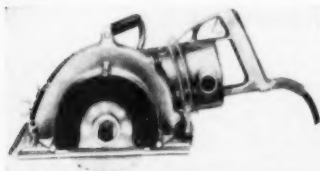
NEW EQUIPMENT • MATERIALS

Fill Sloper—Central Construction Co., Indianola, Iowa. Attachment for Caterpillar No. 12 motor grader for finishing shoulder lines and inside slopes is 5' wing which is attached to moldboard. Power control is through hydraulic pump mounted on grader frame and driven by one of regular control shafts. Pump drives small hydraulic motor which in turn operates worm and gear. Known as "B-Line," attachment can be used in raised position to clean up bottom of fill slope and move surplus material from ditch bottom. It can also be used as extension for cutting high banks out of reach of moldboard. Folder describing sloper is available from manufacturer.



"B-Line" fill sloper

Saw—Skilsaw, Inc., 5033 Elston Ave., Chicago 30. Model 117 7" portable electric groover saw is one-man operated, has die-cast aluminum alloy housing, safety trigger switch, universal motor and ball- and tapered-bearing construction. When used with 7" dado set, it can cut away maximum cross-section of over 4 sq. ins. Dado sets are adjustable to dado and plow up to $2\frac{1}{16}$ " wide and built-in depth adjustment allows range of 0" to $2\frac{1}{16}$ " depth of groove. Regular combination blade of 10" diameter may also be used with saw for standard cross-cut and rip sawing in lumber up to $3\frac{3}{8}$ " thick.



Skilsaw Model 117 groover saw

THE CONSTRUCTOR, AUGUST 1950

FASTER BETTER SOIL COMPACTION

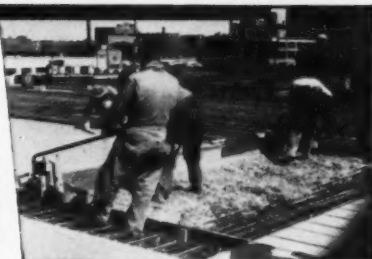
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and OTHER JOBS**



CROWNS—(Any Type)—INVERTS—UNDERCUTS

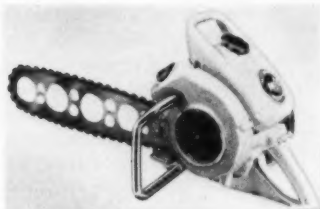
With the Jackson electric Vibratory Hand Screed (powered by a Jackson 1.25 KVA Portable Power Plant) it is possible to eliminate center construction joints and pour full widths up to 30 ft. And it is the only screed that can be rolled back (on 4 rollers) for second passes. Screed is furnished with all hardware, cable, shoes, rollers and vibratory motor attached to an 8 ft. plank. The contractor has only to provide himself with a plank of suitable length, specified crown, and then transfer the hardware to be set for any particular use. Screed has strong tendency to propel itself forward and requires only two men on any width slab.

FOR SALE OR RENT

The above equipment as well as many other time and money-saving Jackson vibrators are for sale or rent at your Jackson Distributor. See them there or write for handy "POCKET GUIDE" to the Jackson line.

ELECTRIC TAMPER & EQUIPMENT CO. Ludington, Mich.

Chain Saw—McCulloch Motors Corp., Los Angeles. Model 3-25 gasoline-powered chain saw weighs 25 lbs., including blade and chain, develops 3 h.p. Two straight-blade models are available, with 18" or 24" blades, and 14" bow saw, designed to cut small timber in any position or location. Power unit is special McCulloch single-cylinder, 2-cycle, air-cooled gasoline engine.



McCulloch Model 3-25 chain saw

Lift-Loader—Huber Manufacturing Co., Marion, Ohio. Improved lift-loader for Huber "Maintainer" is hydraulically operated and can raise 1,000-lb. load 9'8", dumping at any height. Loader is double cylinder type. It is mounted on maintainer frame at blade lift cylinder uprights, making it possible to bring lip of bucket, in loading position, 34 1/4" ahead of front wheels. Feature is quick tilting action of bucket as load is raised: when bucket is 4 1/2' above grade, lip of bucket is 23° above horizontal. Bucket is tripped by trip rod connected to lever on control panel. When load is discharged, bucket is returned to loading position by tension springs.

Trucks—International Harvester Co., 180 N. Michigan Ave., Chicago 1. Twelve 6-wheel truck models in International's new "L" line are designed for heavy-duty on- and off-highway service. They range from LF-170, g.v.w., 22,000 lbs. to LF-212, g.v.w., 45,000 lbs. Feature of trucks is new third differential mounted on forward tandem axle. Single propeller shaft runs to forward axle and from there, through third differential, to rear axle. Other features include new valve-in-head engines, new steering system, steel-flex frames, new transmissions and new bogie-to-frame mounting and dual drive axles. Trucks are powered by International's "Super Blue Diamond" and "Super Red Diamond" engines.



International LF-194 with 9-yd. dump body

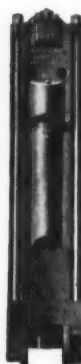
Diesel Engine—The Buda Co., Harvey, Ill. Model 6-DTS-468 is supercharged diesel engine developing 152 h.p. and maximum torque of 370 lbs.-ft. at 1,600 r.p.m. Engine has bore of 4 1/4", stroke of 5 1/2" and piston displacement of 468.3 cu. in. It is 6-cylinder model, full diesel, solid injection type and is designed for use in

trucks and tractors carrying gross loads up to 52,000 lbs. Unit features compactness and light weight. Over-all length from flywheel housing to front of fan is 47 9/16", width at widest point is 29 1/2". It weighs, without electrical equipment and air compressor, 1,418 lbs.

Trailing Axle—Little Giant Products, Inc., Peoria, Ill. Model D trailing axle is designed for use with 3- to 6-ton trucks and offers 18,000-lb. capacity. It has 3 1/2" square axle of heat-treated chrome nickel steel, 21-leaf springs, hydraulic or air brakes, wheels interchangeable with truck.

Sweeper—Little Giant Products announces engine-driven trailer sweeper of 3-wheel type. Powered by 15 h.p. Wisconsin air-cooled engine, it is one-man-operated and is towed behind car, truck or tractor. Recommended use is cleaning sub-surface of roads before asphalt is applied. Brush is available in 6', 7', 8', 9' lengths with 32" diameter. Frame, of 4" structural channels, is supported by 3 wide-base wheels with 18x5.50 6-ply balloon tires. Frame length is 11' and over-head clearance 4 1/2'.

Plaster and Mortar Mixer—Ransome Construction Equipment Division, Worthington Pump and Machinery Corp., Dunellen, N.J. New 6 cu. ft. mixer has 6 adjustable, wide, high-carbon steel blades and 4 stationary blades. Bowl lock prevents machine from dumping batch on ground while it is in operation. Drum can be emptied in 4-5 seconds, depending on consistency of batch. Bag cutter is installed on protective grill.



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Wodack Electric Tool Corp.
4627 W. Huron St., Chicago 44, Ill.

NEW EQUIPMENT • MATERIALS

Pipe Scarfing Attachment—Roy-lyn, Inc., 718 W. Wilson Ave., Glendale 3, Calif. Attachment for use with Kimmont universal power unit permits cutting or scarfing pipe or tanks while they are being turned by power unit. Attachment is installed through existing bolt holes, without modification or use of special tools. Provision is made for vertical and horizontal adjustment of cutting torch. Protractor dial provides for angular adjustment. Attachment is hinged to swing torch out of way while changing work, without disturbing adjustments. Three-quarter-inch I.D. torch tip holder is supplied with brass tip adapter bushings in sizes of $\frac{1}{2}$ ", $\frac{9}{16}$ " and $\frac{11}{16}$ ".

Saws—Porter-Cable Machine Co., Syracuse 8, N. Y. Models A-6 and A-8 "Guild Saws" feature built-in calibrated angle-adjustment for accurate bevel cutting and instant depth control. Saws are equipped with precision-cut helical gear drive. Model A-6 cuts full 2" at 90° and Model A-8 cuts 27/8" at 90°. Turbine fan ventilation system draws air through motor and discharges it at front. Blade is on right side. Saws have spring-loaded swing guard and grip handle on top. Standard equipment for both saws includes one combination saw blade, 10' cord, wrench, tube of grease and manual.

Movie on Explosives

A motion picture outlining the proper methods for handling commercial high explosives has been released by The Aetna Casualty and Surety Co. of Hartford, Conn.

Entitled "Before the Blast," the 10-minute film is one of a special series produced by Aetna's motion picture bureau dealing with safety problems in the construction industry.

The film illustrates the basic safety rules in connection with the transportation, storage and use of commercial high explosives. Demonstrated in the film, which pictures the dynamiting of stumps as well as huge hillsides, are the standard procedures for both large and small blasting operations.

Stressing safety precautions, the film demonstrates each step in preparing to detonate explosives.

The film may be obtained for showings either through local Aetna agents or from the company's public education department at Hartford, Conn.

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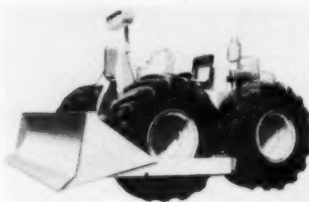
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Tournadozer—R. G. LeTourneau, Inc., Peoria, Ill. Model "Super D Tournadozer" is 3,500 lbs. lighter and equipped with smaller capacity bowl than "Super C." It is powered by 122 h.p. diesel engine, has bowl capacity of 1.8 yds. and 4 speeds forward up to 19 m.p.h. and 2 reverse speeds. It is mounted on big rubber tires, offered in 2 sizes: 21x25 or 56" wide base rim. It is equipped with "Tournamatic" transmission and air-synchronized, multiple-disc clutches. Steering is accomplished by controlling wheels on each side through use of air-actuated



"Super D Tournadozer"

multiple-disc clutches and brakes. Bowl is cable-controlled and is operated through electric motor and gear reduction box. Wheelbase is 5'11 $\frac{5}{8}$ ", length, 15'2", height, 8'1", width of blade, 11'3", height of bowl, 36", height blade can be raised above ground, 44", distance blade can be lowered, unlimited.

Ditcher—Findlay Division, Gar Wood Industries, Findlay, Ohio. Buckeye Model 402 service utility ditcher has maximum depth of 4' and maximum cutting width of 8". Powered by 47 h.p. at 1,600 r.p.m. gasoline engine, it has top digging speed of 1,308 ft. per hour. Machine is mounted on Buckeye non-clogging, self-cleaning crawlers which are provided with spring release. It can work on uneven ground as left-hand crawler is adjustable vertically 8". Boom is of 2-piece box-type construction. Cutting equipment consists of replaceable quick-change rooter bits, wedged into cast alloy steel buckets. Cutting and carrying buckets are

bolted alternately to heavy-duty chain. Telescoping shoe post automatically retracts when stabbing holes. Two dirt plows keep immediate ditch bank free of spoil. Ground bearing pressure is 6.1 p.s.i.



Buckeye 402 ditcher

Wood Fire Door—Fox Bros. Manufacturing Co., 2768 Victor St., St. Louis 4. Protexol-impregnated fire door has received its one-hour fire rating label from Underwriters' Laboratories, Inc. Three approval labels are



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NEW EQUIPMENT • MATERIALS

now available to Fox wood fire door (Associated Factory Mutual Laboratories, and N.Y.C. Board of Standards and Appeals). Underwriters' retardant report noted following results in 60-minute test: no flame passage through or around door; average heat transference to unexposed sides (of 2 doors tested), 110 F. and 70 F. respectively, at end of 30 minutes; strength test showed that door slammed with considerable impact for 100,000 times showed no loosening of attachments or separation of parts of door assembly. Transverse load test revealed permanent deflection of less than $\frac{1}{64}$ " under 300-lb. test.

Steel Scaffolding—Safway Steel Products, Inc., 6234 W. State St., Milwaukee 13. Scaffolding for light-duty construction is known as "Safway 4 by 4" scaffolding because basic end frame members measure 4' wide by 4' high. These parts may be assembled in scaffolds or towers as high as 40' and for loads not exceeding 50 lbs. per sq. ft. Members are made from high carbon steel tubing welded in rigid design. Standard "4 by 4" end frames are certified to 4,000 lbs. uniform load and 16,000 lbs. total leg load. Scaffolding has been approved by Underwriters' Laboratories, Inc., and is subject to their re-examination service. Legs rest on base plates or screw jacks which compensate for uneven terrain.



Safway light-duty steel scaffolding

Pump—Goulds Pumps, Inc., Seneca Falls, N. Y. New line of self-priming centrifugal pumps are offered in sizes from $\frac{1}{4}$ h. p. to 5 h. p., open and closed impellers, capacities to 120 g.p.m. heads to 135' and suction lifts up to 25'. Pumps are positive self-priming and have no priming reservoirs. All valves are eliminated.



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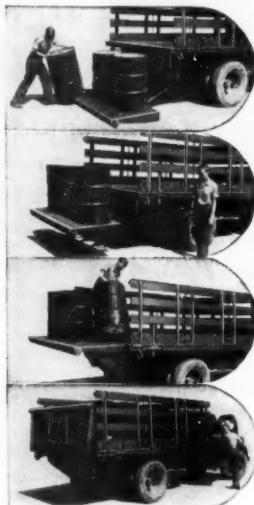
415 Lexington Avenue
New York 17, N. Y.

SURVEYS

VALUATIONS
APPRAISALS

NEW EQUIPMENT • MATERIALS

Lift End Gate for Trucks—*Perfection Steel Body Co., Galion, Ohio.* "Cobey Hydra-Power" end gate can be installed on any make or model truck with suitable body type and is operated from truck power take-off. Lifting and closing of gate are accomplished by hydraulic power. Gate is of steel and wood construction with load capacity of 3,000 lbs. Gate may be stopped at any point between ground and truck floor. Operating controls are located at rear of truck platform and may be operated from ground by hand or from gate by foot or hand. Controls for operation from truck cab can be supplied at extra cost.



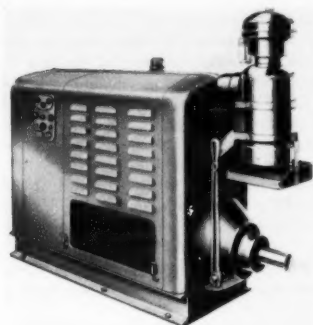
"Cobey Hydra-Power" end gate

Drill—*SpeedWay Manufacturing Co., Cicero, Ill.* Type 400 1/2" capacity "SpeedDrill" weighs 8 3/4 lbs. and delivers half h.p. at drill point under normal load. Aluminum die castings are used throughout. Drill is powered by series wound universal motor. It has cast-in air-cooling system. Tool is equipped with Jacobs geared chuck and heavy 3-wire lead cord with ground jack and carries Underwriters' Laboratories label.

Road-Marking Machine—*Beaver Tractor Co., Stratford, Conn.* Small tractor, operated by one man who rides, has paint-carrying tank attached to rear. Paint is fed through spray gun under pressure. Machine is geared to travel from 5 to 6 m.p.h.

and all action is automatic. Machine can be loaded on small truck for transportation to job.

Diesel Engine—*Detroit Diesel Engine Division, General Motors Corp., 13400 W. Outer Drive, Detroit 28.* Lightweight engine, designated "110" because of its 110 cu. in. displacement per cylinder, is 6-cylinder, 2-cycle unit rated at 275 h.p. Bore is 5", stroke, 5.6". Features include blower scavenging with gear-driven centrifugal blower; unit injectors (one for each cylinder); cylinder block and head one-piece castings; forced-feed lubrication, with gear-driven pump delivering 45 gals. per minute at 1,800 r.p.m. "110" is offered as bare engine, with full equipment for marine or industrial use, or with special accessory arrangements.



Detroit Diesel lightweight engine

Structural Concrete Tests

Tests of full-size concrete structural members and assemblies, with actual service loads applied, are being planned for a new type testing machine recently erected for the Portland Cement Association in its new research and development laboratories in Chicago.

The new machine, designed and built by Baldwin Locomotive Works, can apply loads up to 1,000,000 pounds in compression or flexure, to structures up to 30 feet long, 10 feet wide and 15 feet high.

With the new machine, Dr. A. Allen Bates, vice president for research and development, and his associates plan to test concrete wall and floor panels, road paving slabs, reinforced and prestressed beams, concrete block assemblies and other large monolithic or assembled concrete structures.

NEW EQUIPMENT • MATERIALS

Tractor-Loader—*Oliver Corp., 19300 Euclid Ave., Cleveland 17.* "Strait-Line" hydraulic loader digs at either front or rear end of tractor and dumps always in front. Manufactured by Maine Steel, Inc., South Windham, Maine, it is for use exclusively on Oliver Model 77 industrial wheel tractors. Special "Push-Tilt" bucket has long loading lips with sides sloping up to bucket proper at angle of 30°. Rear-end tilt is obtained by pushing bottom of bucket away from tractor instead of pulling top of bucket toward tractor. Between bank and truck bucket is carried 18" off ground with tilt of 40° to keep load from spilling. Bucket assumes nearly vertical position when raised to roof height in rear and automatically stays that way as it travels over roof to front dumping position. On level surface, "Strait-Line" can lift load of 4,100 lbs. to height of 8' in front and can swing 2,900 lbs. over top from rear to front. Combined weight of tractor and loader is 10,200 lbs. Bucket size is $\frac{9}{16}$ yds. with side boards to enlarge it to $\frac{3}{8}$ yds. Travel speed of combination is 15 m.p.h.



Oliver tractor-loader

Power Take-Off—*Mobile Power, Inc., Box 997, Lansing, Mich.* Top-mounted power take-off, known as "Tangen," is direct-connected to vehicle engine and operates either when vehicle is in motion or stationary. Speed is governed by crankshaft speed without relation to transmission range. It will fit almost every make of truck, manufacturer states.

Concrete Saw—*Martin Fireproofing Corp., P.O. Box 27, Kenmore Station, Buffalo 17, N. Y.* "Creeper" saw is equipped with electric motor, guide rails and choice of wet or dry cutting. All working parts are shielded by heavy-gage sheet steel welded into single unit. Cutting assembly is pivoted on ball bearings. Weight rests forward on semi-pneumatic tires.



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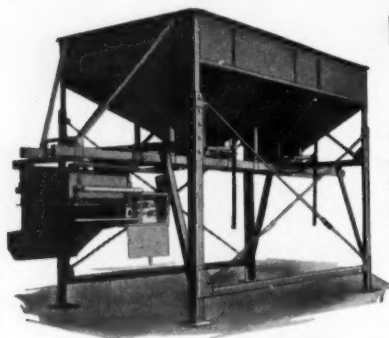
Standard Fire Insurance Company

Connecticut

Trucks—Mack Trucks, Inc., 350 Fifth Ave., New York 1. New line of "Golden Anniversary" Model A trucks are powered by new Mack "Magnadyne" engine. Engines are broken-in at plant and are ready for immediate heavy work. Models include: A-20, 17,000 lbs. (g.v.w.) designed for medium-capacity short

hauls and delivery work; A-30, 21,000 lbs., for medium heavy-duty hauling; A-40, from 24,000 lbs. (g.v.w.) to 40,000 lbs. (g.v.w.) for heavy-duty-long-haulage work. A-40 includes dumper chassis, 6-wheel chassis, highway chassis and tractor. Standard equipment on all models includes: deluxe cab, rear view mirror, painting in synthetic

enamel, electric starting and lighting system, sealed-beam headlights, combination stop and tail light, electric horn, defroster nozzles, speedometer, spare rim, front bumper and tool kit.



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Use with a

105 - 115 - 145 - 165 Mixer

Complete—with scale for two or three aggregates. With two or three overhead storage bins. For use on culvert—bridge—curbing—foundation jobs.

Wherever above size mixers are in operation.

PROMPT DELIVERY — WRITE OR WIRE

Manufactured by

WINSLOW SCALE CO.

TERRE HAUTE, IND.

Distributors Located throughout U.S.



Mack Model A

Roller—Buffalo-Springfield Roller Co., Springfield, Ohio. Tandem rollers in 8- to 15-ton class may now be equipped with new type of segmented guide roll consisting of 2 sections mounted on roller bearings and free to rotate independently on guide roll axle. Heavy steel pads mounted on spokes are placed in staggered rows around axle forming actual compacting surfaces of roll. Pads enter loose material with minimum of displacement. Compaction takes place only at lower elevations of loose material and pads leave material layer without disturbing compacted material.

The ROGERS 4-FEATURE POWER-LIFT DEMOUNTABLE GOOSENECK



STOOPS TO CLEAR LOW OVERHEAD OBSTRUCTIONS



RAISES ITS DECK TO CLEAR HIGH BANKED CROSSINGS



Patents Pending

EMBODYING A NEW AND VALUABLE FEATURE IN TRAILER SERVICE

It embodies the kind of versatility that makes every haul easier, faster, more profitable.

Loading, at a lower angle, is faster. Larger tires carry heavier loads legally. Unloading, reloading, detouring are avoided through quick adjustment of the deck height to different conditions encountered.

It's equally as rugged as the standard Rogers Gooseneck regardless of its detachable feature. And it's available on most Rogers Trailers and adaptable to many trailers of other makes.

Bring your equipment up-to-date and be in a position to handle operations more efficiently and more profitably.

Export Office: 50 Church St., N. Y. 7, N. Y. • Cable Address: "Brosctites"

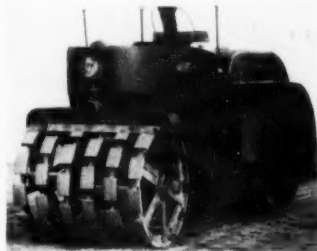
ROGERS TRAILERS

EXPERIENCE builds 'em



PERFORMANCE sells 'em

ROGERS BROTHERS CORPORATION, 223 Orchard St., ALBION, PA.



Buffalo-Springfield segmented guide roll

Dampproofing Materials—Philip Carey Manufacturing Co., Cincinnati 15. Two new products are designed to reduce penetration of moisture and underground seepage through foundations and walls above and below grade. Carey "Mastic" is heavily fibrated asphalt compound for use in dampproofing foundation walls below grade, or as plasterbond on interior surfaces of exterior masonry walls above grade. It can be applied with trowel or sprayed. "Semi-Mastic" is semi-fibrated asphalt compound for reducing penetration of dampness through porous masonry foundations and walls. It may be applied with brush or spray equipment.

NEW LITERATURE

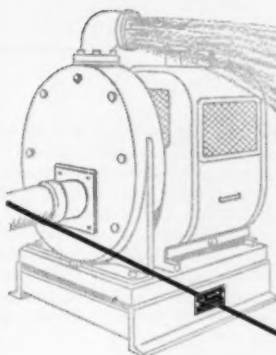
Concrete Forms—Williams Form Engineering Corp., Box 925 Madison Square Station, Grand Rapids 7, Mich. Revised Catalog 1950 presents Williams ties and spreaders, anchors, clamps, waler supports and form hardware. New items in catalog are "Hex-Lock" clamp, "Snap-on" spacer-clamp, form aligners, reversible waler supports. In addition to presenting specifications and features of items, catalog contains tables giving methods for designing of forms. Complete description of construction of small retaining walls is given. Illustrations show large dam and bridge projects on which Williams equipment was used.

Steel Selection—Joseph T. Ryerson & Son, Inc., P.O. Box 8000-1, Chicago 80. Bulletin, *Guide to Steel Selection*, lists all popular grades of hot-rolled and cold-finished carbon and alloy steel bars, giving principal characteristics, mechanical properties and uses.

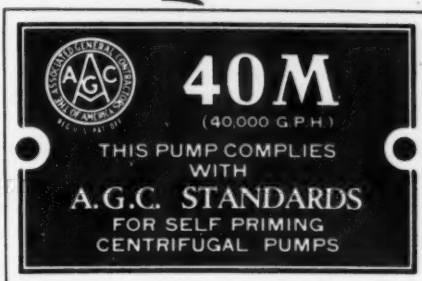
Mixer—Worthington Pump and Machinery Corp., Harrison, N.J. Bulletin B-1700-B2 describes current models of Worthington-Ransome "Blue Brute" large concrete mixers. Four sizes are presented—28S (one-yd. portable or stationary), 56S (2-yd. stationary), 84S (3-yd. stationary) and 126S (4½-yd. stationary). Booklet illustrates how mixers, when installed in central mixing plant, can be used in conjunction with truck mixers or agitators. Attachments and accessories are illustrated. Complete specifications and dimensions are given.

Chemical Construction Materials—Atlas Mineral Products Co., 42 Walnut St., Mertztown, Pa. Bulletin MCC 1 describes line of corrosion-proof linings, corrosion-proof cements, acid-proof brick and tile, corrosion-proof brick sheathings, corrosion-proof protective coatings and corrosion-proof floors. Estimating data are included.

Crushers—Pioneer Engineering Works, Minneapolis 13. New line of re-designed twin and triple roll crushers are presented in Bulletin 617. It describes and illustrates application of roll crusher in gravel, rock, ag-lime and mining industries and contains tables and information to enable selection of proper type and size of crusher for job. Dimension and foundation



ACCEPTED STANDARDS



You always know what a pump will do when it carries this plate

The members of the pump bureau are competing for your business in the best American tradition of free enterprise. However, in the interest of the contractor, they have been able to establish certain basic standards for contractors' pumps. These standards are approved by A. G. C. and guaranteed by the manufacturers listed below because they give the user an assurance of performance that he needs to properly plan his work. These accepted standards give contractors a more certain tool to use in building a greater America.



CONTRACTORS PUMP BUREAU

(Established 1938) Affiliated with
THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC.
Munsey Building, Washington 4, D. C.

MARLOW PUMPS Ridgewood, N. J.	WORTHINGTON PUMP & MACH. CORP. Holyoke, Mass.	CHAIN BELT CO. Milwaukee, Wisconsin
NOVO ENGINE CO. Lansing, Michigan	LEYMAN MFG. CORP. Cincinnati 2, Ohio	CONSTRUCTION MACHINERY CO. Waterloo, Iowa
RICE PUMP & MACHINE CO. Milwaukee 4, Wisconsin	BARNES MANUFACTURING CO. Mansfield, Ohio	THE GONMAN-RUPP CO. Mansfield, Ohio
STERLING MACHINERY CORP. Kansas City, Mo.	CARVER PUMP CO. Muscatine, Iowa	THE JAEGER MACHINE CO. Columbus, Ohio
	C. H. & E. MANUFACTURING CO. Milwaukee, Wisconsin	

NEW LITERATURE

data are included and special chart shows percentages of various sizes of materials to be expected in product of crusher.

Asphalt Plant—Pioneer offers Bulletin 620 on its Model 101 bituminous plant. Cut-away illustration shows how material flows through plant in continuous process.

Tractor—Caterpillar Tractor Co., Peoria 8, Ill. DW10 tractor is presented in illustrated leaflet (Form 12992). Large keyed illustration shows all features. Specifications are given. Matched equipment—W10 wagon and No. 10 scraper—are pictured and described.

Welding Supplies—Lincoln Electric Co., Cleveland 1. Lincoln Directory of Welding Supplies (Bulletin 467) lists company's line of electrodes, electrode holders, protective shields, welding cable. Books and movies on welding offered by Lincoln are listed.

Steel Scaffold—Beaver Art Metal Corp., Advance Scaffold Division, 1242 Factory Ave., Ellwood City, Pa. "Advance" tubular steel scaffold is illustrated and described in Folder A6. It gives descriptions of patented self-contained cam locks, for attaching cross braces to panels, and stack lock for locking panels together vertically. Various types of standard panels are illustrated.

Rope Chart—New Bedford Cordage Co., New Bedford, Mass. Specifications on manila, nylon and sisal ropes are given in wall chart measuring 17" x 22". Rope diameter, circumference, approximate net weight of 100', approximate gross weight full coils, breaking strength and working strength are included for sizes from $\frac{3}{16}$ " to $3\frac{3}{4}$ " diameter. Ropes offered by New Bedford are listed.

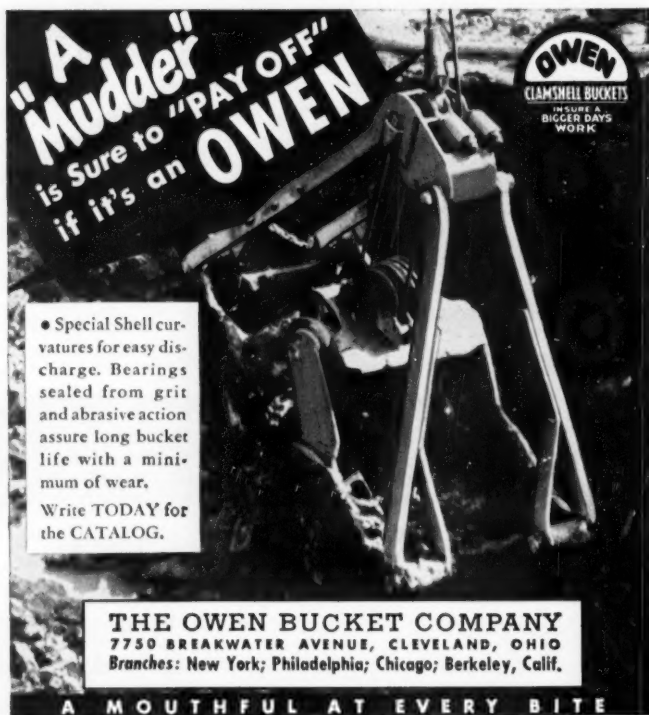
Trencher—Parsons Co., Newton, Iowa. Catalog presents Model 310 "Trenchliner." Photos show produc-

tion features. Engineering details are discussed. Illustrations show machine in action on various jobs.

Tractor—International Harvester Co., 180 N. Michigan Ave., Chicago 1. TD-18A crawler tractor is presented in Catalog A-154-NN. Pictures, sectional views and diagrams illustrate features.

Aluminum Scaffolds—Patent Scaffolding Co., 38-21 12th St., Long Island City 1, N.Y. Aluminum sectional ladder scaffolds are described in Bulletin PSS-20. Advantages of light weight are shown, and safety features are described. Specifications are given.

Reconditioning Carbide Bits—Rock Bit Sales & Service Co., 2514 E. Cumberland St., Philadelphia 25. Booklet on "Rok-Bits" features illustrated description of reconditioning tungsten carbide bits. Operating suggestions for drillers are included and complete line of "Rok-Bits" are described.



"A Mudder" is Sure to "PAY OFF" if it's an OWEN

• Special Shell curvatures for easy discharge. Bearings sealed from grit and abrasive action assure long bucket life with a minimum of wear.

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A MOUTHFUL AT EVERY BITE

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The swiftest, surest dewatering method is also the simplest and most economical. "Complete's" patented fluted tube wellpoints combine compactness with lightness and strength—enable you to handle tougher jobs at lower costs—keep you on firm ground always. Write, wire or phone for estimates—we have the equipment, experience and personnel.

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COMPLETE WELLPOINT SYSTEMS
FOR SALE OR RENT

MANUFACTURERS' NOTES

Paul H. Davey, Jr., has been elected vice president in charge of production of DAVEY COMPRESSOR CO.

L. J. Lange has been appointed industrial power product specialist of INTERNATIONAL HARVESTER CO. He succeeds S. L. Siegfried.

Allen P. Beckloff has been appointed manager of the tubular products division of Joseph T. Ryerson & Son, succeeding R. W. Burt who was recently appointed Chicago plant sales manager.

Alan S. McClimon has been appointed manager of sales development of THE EUCLID ROAD MACHINERY CO. Mr. McClimon comes to Euclid from Mack Trucks where he was special representative for off-highway truck sales.

Top honors for length of service with R. G. LeTOURNEAU, INC., went to the founder and president when the company recently inaugurated its program of awarding service pins for length of service. R. G. LeTourneau received a diamond-set 30-year pin. Elmer Isgren, executive vice president, and Merle R. Yontz, vice president and treasurer, received 15-year pins.

Le Roi Co. has named Ray Rodolf special sales representative in construction and mining equipment.

Raymond H. Cramer has been appointed general manager of HYATT BEARINGS DIVISION OF GENERAL MOTORS. He succeeds the late H. O. K. Meister. H. R. Gibbons has been named chief engineer in charge of product design, research, application and service engineering. He succeeds O. W. Young who assumes new duties as technical assistant to the office of the general manager.

Richard H. Frizzell has been appointed sales manager of the Structural Products Department of the WICKWIRE SPENCER STEEL DIVISION of THE COLORADO FUEL AND IRON CORP.

PRESTRESSED CONCRETE

A rational method of construction for elevated express highways, heavy underpasses, underground garages, containers and ducts carrying liquids.

L. COFF, Consulting Engineer, 198 Broadway, New York 7, N. Y., Cortland 7-2753

Light, portable RAMSET TOOL needs no air or electric lines to set instantly any of 65 different RAMSET FASTENERS.

RAM
COSTS DOWN
with *Ramset*
Fastening System

Quicker than lightning, the self-contained RAMSET TOOL instantly sets drive pins or threaded studs through steel or wood, into steel, concrete, masonry, other hard materials. Slashes costs and time up to 80% for such fastening jobs. Takes less than a minute from start to finish—faster than you can load and light your pipe! Here's why:

1. No drilling, chipping, plugging, tapping.
2. Insert RAMSET FASTENER into tool, with power charge.
3. Place against work spot. Then RAM! The fastener sets, instantly, tightly.
4. No make-ready or clean-up work. No muss, no fuss, no dirt.
5. Light, compact RAMSET TOOL needs no external power. It's completely self-contained.
6. No hauling heavy equipment. RAMSET TOOL can be carried in one hand and used in tight, confined spaces.
7. Small first cost, pays for itself quickly—and it's savings and profit from then on!

Every day, thousands of users prove the value of RAMSET SYSTEM... the pioneer in powder-actuated fastening methods. A 15-minute demonstration will prove its cost-reducing, time-saving values. Call your local RAMSET Specialist or use coupon for complete details.

STEMCO CORPORATION

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ASK FOR DEMONSTRATION AND DETAILS!

Stemco Corporation, 12117 Berea Road, Cleveland 11, Ohio

cc

Please send further information on cost-cutting, time-saving value of RAMSET FASTENING SYSTEM.

Name _____ Title _____

Company _____

Kind of business _____

Address _____

MANUFACTURERS' NOTES

GORMAN-RUPP Co. has established a new department specializing in the development of small centrifugal pumps. Edward M. Smith has been appointed hydraulic engineer and Horace M. Montgomery project engineer of the new department.

Hugo W. Liebert, general works manager of six Tractor Division plants of ALLIS-CHALMERS MANUFACTURING Co., retired from active service June 30, 1950. Mr. Liebert recently completed 43 years' service with Allis-Chalmers. John Ernst succeeds him as general works manager.

R. E. Bansemer has been appointed assistant general sales manager of KOEHRING Co. He succeeds John E. Chadwick who will join Dalrymple Equipment Co., Koehring distributor in Mississippi.

John G. Watson has been appointed assistant sales manager of JAHN TRAILER DIVISION OF PRESSED STEEL CAR Co. He was formerly assistant eastern district manager of the Shovel

and Crane Division of Lima-Hamilton Corp.

A major expansion in the facilities of THE BAKER MANUFACTURING Co., involving an expenditure of more than \$150,000, has been announced by W. Converse Staley, president. Construction is to start immediately on a new brick and steel building to contain approximately 10,000 square feet of floor space.

Construction has begun on a 35,000-square-foot addition to the plant of SKILSAW, Inc. This will increase total space to approximately 200,000 square feet.

Mack Trucks Caravan

A 1950 Model A Mack truck, fresh from the assembly line, left Allentown, Pa., June 22 with a message from Mayor Donald V. Hock to 19 mayors in various parts of the United States. This message called attention to

Mack Trucks' nation-wide Golden Anniversary celebration, marking its 50th year in business.

Leaving of the caravan climaxed a day-long celebration of Mack's 50th anniversary in Allentown.

Pipeline Movie

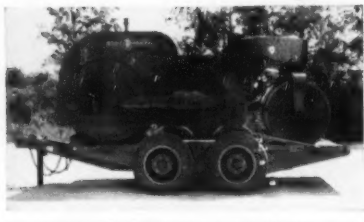
All phases of pipeline construction—including trenching, rock drilling, blasting, welding, doping, wrapping, laying and backfilling—are pictured in a new film, "As the Crow Flies," now being distributed by Gardner-Denver Co.

All scenes were photographed in the Cumberland Mountains, between Green Brier and Oak Ridge, Tenn. Action shows construction work on the 172-mile, 22-inch natural gas line laid by Oman-Fulton-Brodie Co. for the East Tennessee Natural Gas Co.

The approximate running time is 21 minutes. Bookings for interested groups may be arranged by contacting Gardner-Denver Co., Quincy, Ill.

Get a load of these features

- Equalized brakes
- Rigid cross bracing
- Electrically welded
- Extra rugged gooseneck



Get more production from your equipment with

JAHN Heavy Duty TRAILERS

KEEP your equipment earning money—move it to the next job without delay on a Jahn Trailer. A complete range of models—from tilt type to tandem or multiple axle types—meets every hauling requirement economically and safely. Write for information or see your nearest Jahn distributor.

JAHN TRAILER DIVISION PRESSED STEEL CAR COMPANY, INC.

601, & N. Michigan Ave., Chicago 2, Ill.

THERE'S A JAHN TRAILER FOR EVERY HAULING NEED



Tandem Axle Trailers



Single Axle Tilt Trailers



Single Axle Trailers

ADVERTISERS' PRODUCTS

Manufacturers' addresses are listed on page 71

Air-Entraining Agents

A. C. Horn Co.

Asphalt Plants (Portable)

Iowa Mfg. Co.
Standard Steel Works
White Mfg. Co.

Axles (Truck)

Eaton Mfg. Co., Axle Division

Backfillers

Bucyrus-Erie Co.
Cleveland Trencher Co.
Harnischfeger Corp.
Parsons Co.

Batches

Blaw-Knox Division
Butler Bin Co.
Construction Machinery Co.
Heltzel Steel Form & Iron Co.
C. S. Johnson Co.
Winslow Scale Co.

Bearings (Anti-Friction, Tapered Roller)

Hyatt Bearings Division
Timken Roller Bearing Co.

Bins

Blaw-Knox Division
Butler Bin Co.
Heltzel Steel Form & Iron Co.
Iowa Mfg. Co.
C. S. Johnson Co.
Universal Engineering Corp.
Winslow Scale Co.

Bits (Detachable Drill)

Ingersoll-Rand Co.
Timken Roller Bearing Co.

Blades (Grader, Maintainer, Snow Plow, Bulldozer, Scarifier)

Shunk Manufacturing Co.

Bridges

American Bridge Co.
Armco Drainage & Metal Products

Buckets (Clamshell & Dragline)

Blaw-Knox Division
Bucyrus-Erie Co.
Harnischfeger Corp.
C. S. Johnson Co.
Owen Bucket Co.
Pettibone Mulliken Corp.
Wellman Engineering Co.

Buckets (Concrete)

Blaw-Knox Division
Construction Machinery Co.
Heltzel Steel Form & Iron Co.
Jaeger Machine Co.
Owen Bucket Co.

Building Papers

Sisalkraft Co.

Buildings (Steel)

Allied Structural Steel Cos.
American Bridge Co.
Armco Drainage & Metal Products

Buildings (Steel)—Continued

Clinton Bridge Works
Gage Structural Steel Co.
Macomber, Inc.
Midland Structural Steel Co.
Smooth Ceilings System
Truscon Steel Co.

Bulldozers

J. D. Adams Mfg. Co.
Bucyrus-Erie Co.
R. G. LeTourneau, Inc.

Car Pullers

Clyde Iron Works

Ceilings

Smooth Ceilings System

Cement (Common and Special)

Lehigh Portland Cement Co.
Lone Star Cement Corp.
Universal Atlas Cement Co.

Cement (White)

Trinity White, General Portland Cement Co.
Universal Atlas Cement Co.

Clamps (Hose)

Dixon Valve & Coupling Co.

Compressors

Allis-Chalmers Co.
Ingersoll-Rand Co.
Jaeger Machine Co.

Concrete Curing Material

A. C. Horn Co.
Sisalkraft Co.

Concrete Mixers, Pavers, Tampers

Chain Belt Co.
Construction Machinery Co.
Foote Co.
Jaeger Machine Co.
Knickerbocker Co.
Koehring Co.
Kwik-Mix Co.
T. L. Smith Co.
Worthington Pump & Machinery Corp.—Ransome Div.

Concrete Vibrators

Electric Tamper & Equipment Co.
Ingersoll-Rand Co.
White Mfg. Co.

Conveying Machinery

Chain Belt Co.
Iowa Mfg. Co.
Joy Mfg. Co.
Link-Belt Co.
Universal Engineering Corp.

Cranes

Austin-Western Co.
Bucyrus-Erie Co.
Cleveland Trencher Co.
Clyde Iron Works
Harnischfeger Corp.
Koehring Co.
R. G. LeTourneau, Inc.
Link-Belt Speeder Corp.
Michigan Power Shovel Co.
Northwest Engineering Co.



SENSATIONAL!

Only \$ **375⁰⁰** FOB WATERLOO

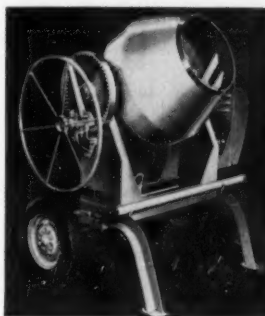


WONDER TILTER AGG RATED 3½ S END DISCHARGE MIXER

TOP QUALITY CONSTRUCTION

☒ CHECK THESE FEATURES

THEY SPEAK FOR THEMSELVES



★ Figure "8" Mixing Action

★ Semi-Steel Cast Drum with Leak-proof Alloy Steel Cone

★ Timken Equipped Drum and Drive Shaft

★ One Piece Welded Steel Frame

★ V Belt Drive

★ Cantilever Spring Mounted



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WATERLOO, IOWA

PLYWOOD FOR CONCRETE FORMS

PLYFORM
CONCRETE FORM EXTERIOR
PLASTIC FACED PLYWOOD

GPX



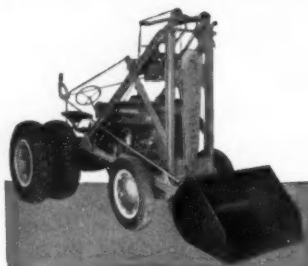
PLASTIC FACED PLYWOOD

EXT-DFPA-CONCRETE FORM-B-B



From Stock & Direct Mill Shipments

The CARL BESCH COMPANY, Inc.
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White Front End Loaders Have Extensible Booms

The extending boom feature of White Loaders has been greatly commended by all users. It permits loading standard trucks without hand spreading. It is not necessary to be close to truck to discharge. It can fill high bins or extend over walls. Bucket is close to tractor wheels when loading. At top of rise it moves forward and discharges 2½' ahead. It can be dumped at any point in its lift.

Full mechanical operation, from front of engine. Does not interrupt tractor operation nor draw-bar service. Backfiller blades interchangeable with bucket.

Made ONLY for Oliver 77, 88; Case DI, SI, CI; Minn-Moline UT-1; International I-6, ID-6; I-30; #20.

Write for Circular

ELKHART White Mfg. Co. INDIANA

ADVERTISERS' PRODUCTS

Crushing Machinery

Allis-Chalmers Co.
Austin-Western Co.
Iowa Mfg. Co.
Universal Engineering Corp.

Culverts

Armco Drainage & Metal Products

Cutters (Abrasive)

Skilsaw, Inc.
Wodack Electric Tool Corp.

Decking (Roof Steel & Aluminum)

Macomber, Inc.

Derricks

Clyde Iron Works

Doors (Metal, Wood)

Ceco Steel Products Corp.
Detroit Steel Products Co.
Fox Bros. Mfg. Co.
Kinnear Mfg. Co.
Truscon Steel Co.

Dredging Machinery

Bucyrus-Erie Co.
Ellicott Machine Corp.
Harnischfeger Corp.
Northwest Engineering Co.

Drills & Drilling Machinery

Bucyrus-Erie Co.
Independent Pneumatic Tool Co.
Ingersoll-Rand Co.
Timken Roller Bearing Co.

Drills (Electric)

Ingersoll-Rand Co.
Skilsaw, Inc.
Wodack Electric Tool Corp.

Elevators (Material)

Chain Belt Co.
Iowa Mfg. Co.
Link-Belt Co.
Universal Engineering Corp.

Engines

Allis-Chalmers Tractor Div.
Caterpillar Tractor Co.
Continental Motors Corp.
Detroit Diesel Engine Division
Harnischfeger Corp.
Ingersoll-Rand Co.
International Harvester Co.
Murphy Diesel Co.

Expansion Joints

Laclede Steel Co.

Fasteners (For Steel, Concrete)

Stemco Corp.

Finishing Machines (Bituminous)

Blaw-Knox Division
Foote Co.

Finishing Machines (Concrete)

Blaw-Knox Division

Floor Construction

Smooth Ceilings System

Flooring

Truscon Steel Co.

Forms (Concrete) and Accessories

Carl Besch Co.
Blaw-Knox Division
Economy Forms Corp.
Heltzel Steel Form & Iron Co.
A. C. Horn Co.
Joseph T. Ryerson & Son, Inc.
Symons Clamp & Mfg. Co.
Universal Form Clamp Co.
Williams Form Engineering Corp.

Generating Sets (Electric)

Caterpillar Tractor Co.
Murphy Diesel Co.

Graders

J. D. Adams Mfg. Co.
Allis-Chalmers Tractor Div.
Austin-Western Co.
Caterpillar Tractor Co.
Euclid Road Machinery Co.
Galion Iron Works & Mfg. Co.
Koehring Co.

Gravel Plants (Portable)

Iowa Mfg. Co.

Grinders (Electric)

Independent Pneumatic Tool Co.
Wodack Electric Tool Corp.

Hammers (Electric)

Independent Pneumatic Tool Co.
Wodack Electric Tool Corp.

Hoists

Clyde Iron Works
Construction Machinery Co.
Harnischfeger Corp.
Ingersoll-Rand Co.
Jaeger Machine Co.
King Mfg. Co.
McKiernan-Terry Corp.

Hose (Air, Water, Steam, Suction)

United States Rubber Co.

Insurance (Automobile, Casualty, Compensation, Liability)

Aetna Casualty & Surety Co.
Central Surety & Ins. Corp.
Employers Mutuals of Wausau

Joists (Steel)

Ceco Steel Products Corp.
Macomber, Inc.

Kettles, Heating (Asphalt & Tar)

Standard Steel Works
White Mfg. Co.

Loaders (Portable)

Link-Belt Co.

Lubricants

Gulf Oil Corp.

Lumber (Fireproof)

Fox Bros. Mfg. Co.

ADVERTISERS' PRODUCTS

Menders (Hose)

Dixon Valve & Coupling Co.
Ingersoll-Rand Co.

Millwork

Fox Bros. Mfg. Co.

Mixers (Truck)

Blaw-Knox Division
Chain Belt Co.
Jaeger Machine Co.

Mixing Plants

Blaw-Knox Division
Butler Bin Co.
Chain Belt Co.
Jaeger Machine Co.
C. S. Johnson Co.

Mortar (Masonry)

Lehigh Portland Cement Co.

Nipples (Hose)

Dixon Valve & Coupling Co.

Partitions (Steel, Load-Bearing)

Macomber, Inc.

Pile Drivers

Austin-Western Co.
Bucyrus-Erie Co.
Harnischfeger Corp.
Ingersoll-Rand Co.
Link-Belt Co.
McKiernan-Terry Corp.
Northwest Engineering Co.

Piling (Concrete)

Union Metal Manufacturing Co.

Piling (Steel)

Allied Structural Steel Cos.
American Bridge Co.
Armed Drainage & Metal Products
Bethlehem Steel Co.
Clinton Bridge Works
L. B. Foster Co.
Gage Structural Steel Co.
Inland Steel Co.
Midland Structural Steel Co.
Union Metal Manufacturing Co.

Pipe

Armed Drainage & Metal Products
L. B. Foster Co.
Laclede Steel Co.

Plywood (Concrete Form)

Carl Besch Co.

Pumps (Contractors')

Barnes Mfg. Co.
C.H.&E. Mfg. Co.
Carver Pump Co.
Chain Belt Co.
Complete Machinery & Equipment Co.
Construction Machinery Co.
Gorman-Rupp Co.
Griffin Wellpoint Corp.
Independent Pneumatic Tool Co.
Ingersoll-Rand Co.

Pumps (Contractors')—Continued

Jaeger Machine Co.
Marlow Pumps
Novo Engine Co.
Rice Pump & Machine Co.
Sterling Machinery Corp.
Worthington Pump & Machinery Corp.

Pumps (Jetting)

Complete Machinery & Equipment Co.
Griffin Wellpoint Corp.

Quantity Surveyors

H. A. Sloane Associates

Quarry Plants

Austin-Western Co.
Iowa Mfg. Co.
Universal Engineering Corp.

Rail

L. B. Foster Co.

Railway Equipment & Track Material

L. B. Foster
Pettibone Mulliken Corp.

Reinforced Concrete

Smooth Ceilings System

Reinforcement Accessories

Economy Forms Corp.
Symons Clamp & Mfg. Co.
Universal Form Clamp Co.
Williams Form Engineering Corp.

Reinforcing Steel and Mesh

American Bridge Co.
Bethlehem Steel Co.
Ceco Steel Products Corp.
Inland Steel Co.
Laclede Steel Co.
Joseph T. Ryerson & Son, Inc.
Truscon Steel Co.

Rollers

J. D. Adams Mfg. Co.
Austin-Western Co.
Blaw-Knox Division
Bucyrus-Erie Co.
Buffalo-Springfield Roller Co.
Euclid Road Machinery Co.
Galion Iron Works & Mfg. Co.
R. G. LeTourneau, Inc.

Roof Deck (Steel)

Allied Structural Steel Cos.
Ceco Steel Products Corp.
Clinton Bridge Works
Gage Structural Steel Co.
Midland Structural Steel Co.
Truscon Steel Co.

Rope (Wire)

L. B. Foster Co.
A. Leschen & Sons Rope Co.
R. G. LeTourneau, Inc.
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Sanders (Belt, Disc)

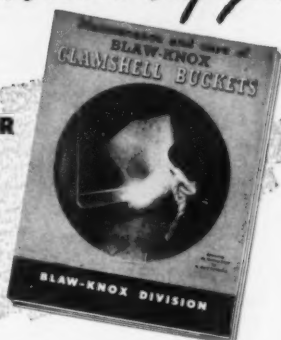
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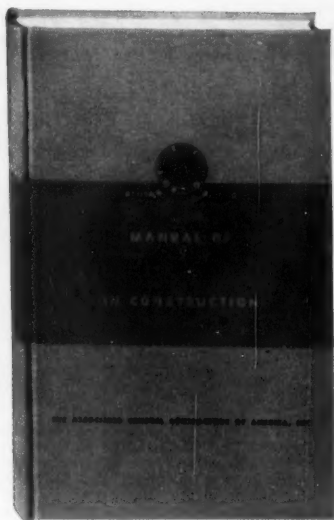


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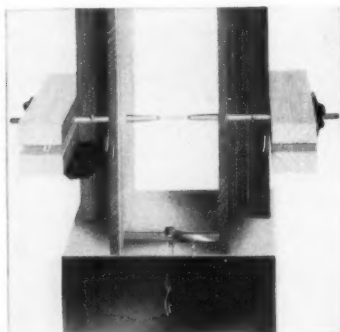
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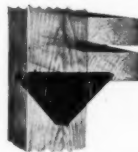
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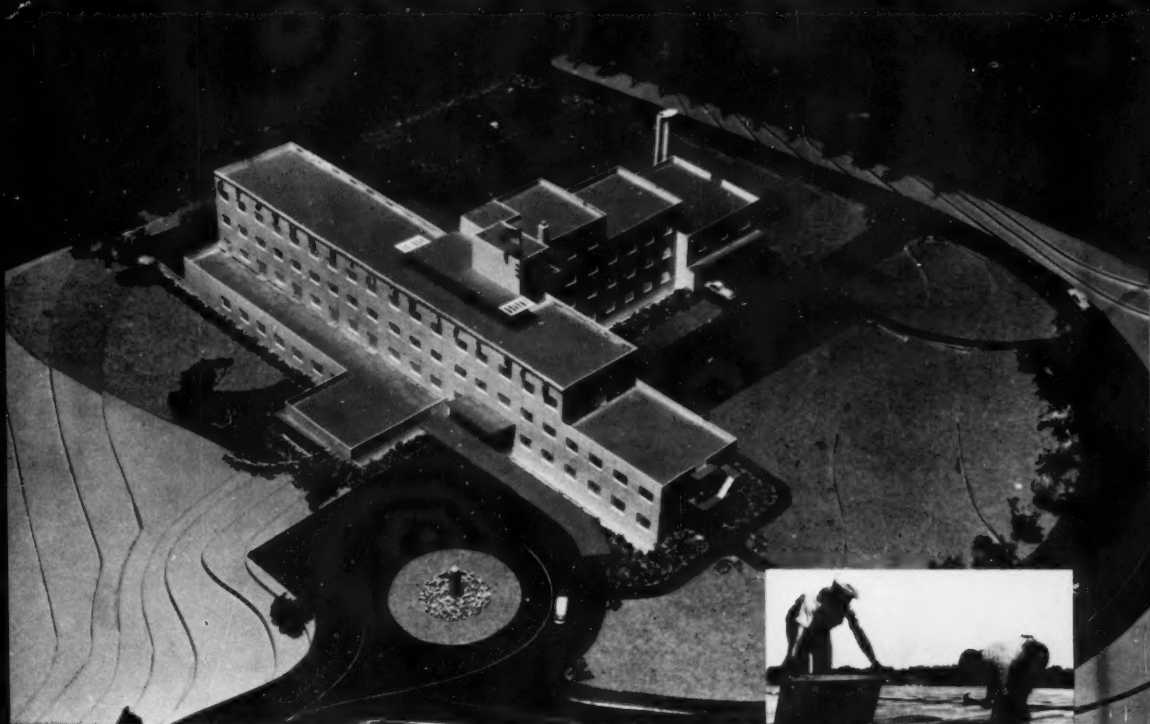


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